



Pension Insurance Data Book 1999



PENSION BENEFIT GUARANTY
CORPORATION

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Overview

The Pension Benefit Guaranty Corporation (PBGC) was established by the Employee Retirement Income Security Act of 1974 to ensure that participants in defined benefit plans receive their pensions even if their plans terminate without sufficient assets to pay promised benefits. Separate insurance programs protect participants in single-employer and multiemployer plans.

PBGC has published the *Pension Insurance Data Book* annually since 1996 to present detailed statistics on PBGC program operations and benefit protection.

In addition to tabular presentations of current and historical data on PBGC's single-employer and multiemployer pension insurance programs, this edition features an analysis of the PBGC guarantee limits and the benefits received by participants in single-employer plans trusteeed by PBGC.

PBGC's Guarantee Limits

An Analysis of Benefits Received by Participants in Selected PBGC-Trusteed Plans

Executive Summary

The Pension Benefit Guaranty Corporation (PBGC) pays participants in the single-employer plans it administers (trustees) the benefits they would have received from their plan, subject to certain constraints set by law and regulation. This chapter reports on our analysis of the impact of these limitations on participant benefits using a nonrandom sample of some of the largest plans PBGC has trusteeed since December 1987.

Our preliminary findings show that the limitations:

- affected the benefits of relatively few participants (less than 6 percent of all participants in our sample);
- reduced benefits for at least one participant in more than 75 percent of the plans in our sample; and,
- on average, reduced the benefits of affected participants by 16 percent.

Of the constraints, the maximum insurance limitation had the greatest impact in terms of both the number of participants affected and the total amount benefits were reduced. This limitation restricts the monthly benefits PBGC will pay to participants, unless either the plan has assets sufficient to fund plan benefits above this cap or PBGC receives sufficient recoveries from employers to cover unfunded plan liabilities. This limitation affected almost 4,100 of the more than 90,000 participants in our sample and, on average, reduced their benefits by 17 percent. The other limitations affected fewer than 500 participants each.

We used a nonrandom process to select the companies whose pension plans we included in our sample. The plans of these companies were responsible for 45 percent of the claims against PBGC and 29 percent of the new participants from 1988 to 1996. However, they are not fully representative of the industries whose plans PBGC trusteeed over this period. While we cannot generalize our results to either the plans PBGC has already trusteeed or those plans it currently insures, the results confirm our long-held belief that these statutory limitations affect a relatively small proportion of the participants in the plans PBGC trusteees. Although relatively few participants are affected by them, the limitations can significantly reduce benefits for a few of the participants who are affected.

I. Introduction

When PBGC trustees a plan, it determines the value of the plan's assets and liabilities as of the date of plan termination. It allocates the plan's assets in sequence across six benefit priority categories until the assets run out. PBGC then uses its own resources to fund any remaining unfunded guaranteed benefits.¹ After a plan terminates, PBGC often recovers, or is deemed to recover,² additional resources to cover a portion of the plan's unfunded liabilities from the plan's corporate sponsor.³ PBGC shares these asset recoveries with the plan's participants, using the participants' portion to fund benefits beyond the PBGC guarantee limits.⁴

The first two benefit priority categories include voluntary and mandatory employee contributions to the plan. Few private defined-benefit plans are contributory, and asset allocations usually begin in the third priority category. This category includes the benefits of participants who either were receiving benefits three years prior to the plan's termination date or were eligible to receive benefits at that time. In many trustee plans, all Category 3 benefits fall within PBGC's guarantees. In others, a portion of the Category 3 benefits will exceed the guarantees. If there are sufficient plan assets, these additional Category 3 benefits will be funded before any subsequent categories of benefits are funded. If the plan's assets are insufficient to cover all these additional benefits, these additional Category 3 benefits will have a first priority claim for the plan participants' share of any recoveries from the plan's sponsor.

Category 4 includes all PBGC-guaranteed benefits that are not included in Category 3. Category 5 includes nonguaranteed vested benefits, while Category 6 contains nonvested and contingent benefits. PBGC pays benefits in Categories 5 and then 6 only when the plan has sufficient assets to pay for these benefits or the participants' share of PBGC recoveries is sufficient to pay benefits beyond Category 3. Participants in PBGC-trustee plans often receive very little or none of their Category 5 and 6 benefits due to the poor financial conditions of both their plan and their plan's sponsor.

¹ Guaranteed benefits include all of a participant's nonforfeitable (vested) benefits, subject to the limitations that are the subject of this chapter.

² Except in unusual situations (i.e., where the trustee plan's unfunded nonguaranteed benefits are \$20 million or more), PBGC is "deemed" to recover a set percentage of the unfunded liabilities from the plan's sponsor. This percentage, known as the Small Plan Average Recovery Ratio (SPARR), is usually the average recovery ratio from all terminated plans' corporate sponsors during the preceding 5 years.

³ We use the term "sponsor" in a broad sense. Responsibility for the plan's unfunded liabilities lies with the contributing sponsor and, if applicable, other members of its controlled group.

⁴ The participants' share of the asset recovery or deemed recovery is the ratio of unfunded nonguaranteed plan benefits to total unfunded plan benefits.

Three statutory limitations constrain the level of PBGC’s guaranteed benefits. These three limitations are the “Maximum Insurance” limitation, the “Accrued-at-Normal” limitation, and the “Phase-In” limitation.⁵ The first limitation places a dollar limit on the size of the monthly benefit PBGC will guarantee a participant. The second ensures that the monthly benefit PBGC pays a participant will be no greater than the monthly straight life annuity benefit the participant would have received had he or she commenced the annuity at the plan’s normal retirement age. The third limits the amount of recent benefit enhancements PBGC will pay to participants.

The Issues

Until now, PBGC has not used trustee plan data to estimate the effects of these three limitation provisions. It generally assumed that these limitations reduced the benefits of 10 to 15 percent of the participants in its trustee plans. To better measure the impact of these three limitations on PBGC’s trustee participants, we selected a nonrandom sample of trustee plans to determine:

- what percentage of plans had participants who lost some of their plan benefits because of these limitations;
- what percentage of participants in these plans had their benefits reduced by each of the three limitations;
- what percentage of vested plan benefits did affected participants actually receive; and
- what was the total amount, in present value terms, of the benefits PBGC did not pay its participants because of these limitations.

These limitations can affect different types of participants—active workers, retirees, and separated vested workers (workers who earned a nonforfeitable right to a pension benefit but left the plan sponsor’s employ without commencing a pension benefit)—in different ways. For this reason, we also looked at how the limitations affected each type of participant.

Methodology

To determine the answers to the four questions listed above, we calculated, in present value terms, the reduction in benefit payments caused by each limitation. PBGC’s internal valuation records describe which guarantee limitations apply to each participant’s

⁵ In application, the accrued-at-normal limitation is applied first, then the maximum insurance limitation, and finally the phase-in limitation. Our ordering follows the size of the limitations’ impact, from greatest to smallest.

benefit. We calculated the estimated present value of the vested plan benefits the participant would have received over his or her lifetime without any reductions and then estimated the present value of the benefits after we applied each individual limitation.⁶ From the difference in these calculations, we determined the number and percentage of participants who lost benefits due to each limitation, the average percentage of benefits lost, and the number and percentage of plans that had at least one participant whose benefits were reduced.

We selected a nonrandom sample of ten large companies whose pension plans terminated after the passage of the Pension Protection Act of 1987 (PPA).⁷ We chose the sponsors in the study based on whether PBGC's actuarial valuation was complete and on the total amount of their plans' unfunded liabilities. Some large companies whose plans had high levels of underfunding were not included in our sample because PBGC had not completed the actuarial valuation for their plans when we selected our sample. Our sample included 22 pension plans with 90,448 participants—26,607 retirees, 34,806 separated vested workers, and 29,035 active vested workers. These 22 plans were responsible for 45 percent of the claims against PBGC from 1988 through 1996 and contained 29 percent of the participants in PBGC-trusted plans that terminated over this period.

The results of our study support our long-held belief that these three limitations affect relatively few participants in the plans PBGC trustees. However, our sample is nonrandom. It is limited to plans of large companies. The benefits of participants in the small plans PBGC trustees are less likely to be affected by the benefit limitations we are studying. Also, the distribution of plans by industry in our sample is not typical of the distribution of plans PBGC either currently insures or has trusted since PPA was enacted. While our results apply only to this sample of plans and not to either the universe of plans PBGC has already trusted or the universe of ongoing plans it may trustee in the future, they still allow us to draw preliminary conclusions about the impacts of these limitations.⁸

The current sample overrepresents airline plans and underrepresents plans in the manufacturing sector. As a result (and as discussed below), we believe the current sample:

⁶ The benefits calculated and reported include both PBGC-guaranteed benefits and any nonguaranteed benefits that were funded by plan assets or recoveries.

⁷ We limited our study to post-PPA terminations because of the fundamental changes in the termination rules PPA made. Among other things, PPA modified the conditions under which a plan could be terminated, the extent of an employer's responsibility for unfunded plan liabilities, and the allocation of any post-termination recoveries.

⁸ This is an ongoing study. In phase two we will expand the sample to include PBGC-trusted plans of additional large companies in economic sectors underrepresented in our current sample. While the expanded sample will continue to be nonrandom, it will be more representative of the large post-PPA plans we have trusted and should provide a more accurate measure of the impact of these limitations.

-
- establishes an upper bound of the impact of the maximum insurance limitation, and
 - establishes a lower bound on the impact of the accrued-at-normal and phase-in limitations.

Because of the emphasis on airline plans in our sample, we believe a greater proportion of participants in our sample were affected by the maximum insurance limitation than would occur in a randomly drawn sample.⁹ About five in six of the participants in our sample worked in the air transportation industry. Participants in this industry account for 25 percent of the participants in the plans PBGC has trusteeed since PPA was enacted in 1987 but only 2 percent of those in the ongoing plans it insures. Some airline plans, such as those for pilots, provide large benefits. As a result, the maximum insurance limitation is likely to affect the benefits of participants in these plans.

On the other hand, some plans in the manufacturing sector, especially those in the steel and automobile industries, often provide large supplemental benefits to participants who retire before becoming eligible for Social Security benefits. Therefore, we believe a random sample of plans would find a greater proportion of participant benefits subject to the accrued-at-normal limitation than we found in this study. Participants from plans in the manufacturing sector account for about half the participants in both the plans PBGC insures and those it trusteeed post-PPA but only about 15 percent of the participants in our sample. Participants from plans sponsored by companies in all other non-air transportation industries are also underrepresented in our sample.

Similarly, we suspect a random sample of plans in our post-PPA trusteeed universe would show more plans and more participants affected by the phase-in limitation than this study suggests. PBGC-trusteed plans whose benefits were subject to collective bargaining agreements are underrepresented in our sample. Benefits in collectively bargained plans usually are determined by multiplying years of service by a fixed dollar amount. This fixed dollar amount increases by amounts specified in the collective bargaining agreement.¹⁰ Often, a portion of the cumulative increase is made effective each year over the life of the agreement. Thus, we suspect that many more PBGC-trusteed collectively bargained plans had recent benefit enhancements than did the plans in our sample.

⁹ The average present value of future benefits for participants in our sample is about two-thirds larger than the average for the participants in all post-PPA trusteeed plans.

¹⁰ In defined benefit plans that pay a benefit based on some measure of compensation times years of service, normal salary increases serve a function similar to the annual increase in the fixed dollar amount in collectively bargained plans, but salary increases are not subject to the phase-in limitation.

II. Impact of the Maximum Insurance Limitation

The maximum insurance limitation restricts the level of benefits PBGC will pay to participants when plan assets and recoveries from plan sponsors are insufficient to cover promised benefits in full. The participants affected by the maximum insurance limitation tend to be those with high salaries, long tenure, or both, those whose plans provide relatively high benefits for a given tenure period and salary history, and those whose plans provided unreduced retirement benefits at a relatively young age.¹¹

The maximum benefit that PBGC will guarantee depends on the calendar year in which the underfunded plan terminates. The maximum benefit guarantee increases yearly.¹² For a plan terminating in 2000, the maximum benefit guarantee is \$3,221.59 per month, or \$38,659 per year, for a participant who commences benefits at age 65. This \$3,221.59 per month is the maximum benefit payable by PBGC whether the participant was aged 65 in 2000 when the plan terminated or first begins drawing benefits at age 65 in 2010. The guarantee is reduced for those who start receiving their pension benefits before attaining age 65.

Table 1 shows the impact of the maximum insurance limitation. This limitation reduced the benefits of 4,096 participants in eight of the ten companies and 15 of the 20 plans sponsored by these eight companies. This is the greatest number of participants in our study affected by any of the three limitations. These 4,096 participants represent 9 percent of the 45,288 participants in these 15 plans, but only 4.5 percent of the 90,448 participants in all 22 plans in our sample. This limitation also reduced the present value of benefits for all affected participants by a total of \$130.9 million, far more than the \$5.3 million benefit reduction caused by the other two limitations combined. Thus, the maximum insurance limitation accounted for more than 95 percent of the total reduction in expected plan benefits caused by the three benefit limitations.

Six in seven of these affected participants were in one of two plans for airline pilots that PBGC has taken over. More than half the remaining affected participants were in another air transportation plan that covered flight engineers. The maximum insurance limitation reduced the benefits of almost 60 percent of the participants in these three plans. This large number of affected participants is not too surprising given the relatively high salaries of pilots and flight engineers, the high average benefits they receive, and their ability to take normal retirement benefits at age 60 or earlier (recall that the maximum insurance guarantee is reduced if benefits are first received before age 65). Once we

¹¹ An example of this latter type of plan would be a “30 and out” plan that allowed a participant to retire at any age with unreduced benefits once he had completed 30 years of service with the plan’s sponsor.

¹² The maximum guaranteed amount is adjusted annually based on changes in the Social Security contribution and benefit base.

subtracted these three air transportation plans and their participants from the totals, we found that this limitation reduced the benefits of less than 1 percent of the 38,844 participants in the remaining 12 plans.

By participant category, the maximum insurance limitation reduced benefits for about 14 percent of retirees, 3 percent of separated vested participants, and 11 percent of active vested participants in these 15 plans. While affected participants in each participant category lost about 17 percent of the present value of their plan benefits (\$32,000 per affected participant, on average), the retirees experienced a much greater average loss than did either the separated or active participants (about \$40,000 versus \$21,000 and \$26,000 respectively). Affected retirees had larger benefit cutbacks because they had higher accrued benefits than those in the other two participant groups. Thus, more of them had earned benefits that were above the maximum benefit guarantee threshold.

The percentage of benefits lost was much greater for some affected participants than for others. A few participants who were entitled to very large benefits from their poorly funded pension plans lost more than half of the present value of their expected plan benefits. However, relatively few affected participants suffered a sizeable reduction in their expected pension benefits because of this limitation. Only one in eight lost as much as 25 percent of their expected benefit, and more than half received at least 85 percent of their vested plan benefits.

Table 1: Impact of the Maximum Insurance Limitation on Benefits

Participant Category	Number of Participants Affected by the Maximum Insurance Limitation	Present Value of Benefits Before Applying the Maximum Insurance Limitation (<i>Dollars in millions</i>)	Present Value of Benefits After Applying the Maximum Insurance Limitation (<i>Dollars in millions</i>)	Percent of Pre-limitation Benefit Received	Present Value of Total Benefits Lost Due to the Maximum Insurance Limitation (<i>Dollars in millions</i>)	Average Loss of Present Value per Affected Participant
Retired	1,911	\$462.8	\$385.7	83%	\$77.1	\$40,300
Separated Vested	529	\$65.9	\$54.6	83%	\$11.3	\$21,400
Active Vested	1,656	\$261.9	\$219.4	84%	\$42.5	\$25,700
Total	4,096	\$790.6	\$659.7	83%	\$130.9	\$32,000

Source: PBGC

III. Impact of the Accrued-at-Normal Limitation

The “accrued-at-normal” limitation constrains the benefits PBGC will pay to a monthly amount that is no larger than the monthly benefit provided by a straight life annuity available at the plan’s normal retirement age. The portion of any combined early retirement benefit and supplemental benefit the participant receives that exceeds the normal retirement age straight life annuity benefit is eliminated by this limitation. For example, if, under the terms of the plan, a participant is entitled to a single life annuity benefit at age 65 of \$1,000 per month but is entitled to an early retirement benefit of \$750 per month and a supplemental benefit of \$400 per month between ages 60 and 65, the accrued-at-normal limitation will cut the supplemental benefit by \$150. In this case, the participant would receive \$1,000 per month from age 60 to 65, instead of \$1,150, and would receive \$750 per month at age 65, the same amount he would have received at age 65 if the plan had not terminated.

Table 2 shows the impact of the accrued-at-normal limitation. This limitation reduced the benefits of 488 participants, the second highest number of the three benefit limitations. The limitation also reduced the total present value of benefits these affected participants received by \$4.3 million, or 17 percent of their pre-reduction benefit. This limitation affected participants in only 4 of the 10 companies in our sample. However, 9 of the 12 plans sponsored by these 4 companies contained affected participants. About 7 percent of the 7,016 participants in these 9 plans received reduced benefits because of the accrued-at-normal limitation. More than 6 in 7 of these affected participants were in just 2 plans. When we subtract these two plans and their participants from the totals for the nine plans, just over 1 percent of the participants in the remaining 7 plans received lower benefits because of this limitation. Thus, the impact of this limitation on the benefits of affected participants is not nearly as widespread or severe, on average, as that of the maximum insurance limitation.

The accrued-at-normal limitation provision reduced the benefits of a larger proportion of active participants (12 percent) in the 9 affected plans than of retired participants (7 percent) or separated vested participants (less than 0.5 percent). The accrued-at-normal limitation reduced the benefits of affected retirees by an average of \$19,000 (20 percent of the average unreduced benefit) versus an average of \$1,000 (less than 6 percent) per affected active worker. These differences in the average reduction are largely accounted for by the differences in the provisions of just 2 plans. Most retirees were in a plan that provided very generous early retirement supplemental benefits, which explains why affected retirees experienced such a large benefit loss. Most active workers were in another plan with a supplemental benefit design that resulted in only small benefit reductions after the accrued-at-normal limitation was applied.

Other statistics support the finding that the accrued-at-normal limitation had a greater negative impact on the benefits of early retirees in our sample than it did on active participants. About one-third of the affected retirees received between 60 percent and 75 percent of their vested plan benefits, one-third received 75-85 percent, and one-third received more than 85 percent but less than 100 percent of what they would have received in the absence of this limitation. However, most affected active participants (almost 70 percent) received between 80 percent and 85 percent of their pre-limitation benefit, and most of the remainder received more than 85 percent.

Table 2: Impact of the Accrued-at-Normal Limitation on Benefits

Participant Category	Number of Participants Affected by the Accrued-at-Normal Limitation	Present Value of Benefits Before Applying the Accrued-at-Normal Limitation (<i>Dollars in millions</i>)	Present Value of Benefits After Applying the Accrued-at-Normal Limitation (<i>Dollars in millions</i>)	Percent of Pre-limitation Benefit Received	Present Value of Total Benefits Lost Due to the Accrued-at-Normal Limitation (<i>Dollars in millions</i>)	Average Loss of Present Value per Affected Participant
Retired	207	\$19.9	\$15.9	80%	\$4.0	\$19,100
Separated Vested	4	\$0.5	\$0.5	94%	**	***
Active Vested	277	\$5.2	\$4.9	94%	\$0.3	\$1,100
Total	488	\$25.6	\$21.3	83%	\$4.3	\$8,800

Source: PBGC

** Less than \$0.05 million

*** No calculation made

IV. Impact of the Phase-In Limitation

The phase-in limitation restricts the proportion of recent plan benefit improvements PBGC will pay to participants.¹³ PBGC will fully cover any benefit improvements the plan made more than 5 years prior to the date of the plan's termination. PBGC will not cover any benefit increase the plan made within a year of the date of plan termination.

¹³ Participants who are also substantial owners (an individual who owns the entire interest in an unincorporated trade or business, more than a 10 percent interest in a partnership, or more than 10 percent of the stock in a corporation) are subject to a different "phase-in" provision that we do not discuss in this chapter because it is rarely applicable in large plans.

For benefit improvements that became effective (or that the sponsor adopted, if later) more than one year but less than 5 years prior to the plan's termination, PBGC will guarantee the larger of 20 percent of the benefit increase or \$20 per month for each full year the increase was in effect.

Of the three limitations, the phase-in limitation affected the fewest number of participants in the trustee plans in our study. (See Table 3.) It reduced the benefits of participants in only 4 companies and in just half of the 8 plans these companies sponsored. The 419 affected participants represent just over one percent of all participants in these 4 plans. However, in 1 of these 4 plans, the limitation reduced the benefits of about 12 percent of the participants. The phase-in limitation reduced total benefits by only about \$1 million, just 2 percent of the vested plan benefits of the affected participants. More than 98 percent of the active and retired participants affected by this limitation received at least 95 percent of their unreduced benefits, reinforcing the minimal impact of this limitation.

The impact of this limitation is relatively small for several reasons. The most important reason is that most sponsors do not regularly improve plan benefits. In addition, few plans receiving ad hoc benefit improvements terminate within five years of the increase, so these increases are usually fully guaranteed by PBGC (subject, of course, to the maximum insurance and accrued-at-normal limitations). Participants likely to have benefits reduced by the phase-in limitation include those in collectively bargained plans that provide regular (yearly) benefit enhancements and those whose employers modified their plans to provide special early retirement incentives shortly before the plan terminated. Even here, the impact of the phase-in limitation may be minimal because PBGC guarantees the greater of 20 percent of the benefit increase or \$20 for each year the increase has been in effect. If the monthly benefit increases are relatively small, they can be fully guaranteed a year or two after the increase becomes effective. For example, a benefit increase of \$30 per month (\$360 per year) will be 66 percent guaranteed by PBGC one year after the increase was made and fully guaranteed after two years.

A second example illustrates what might happen to the benefits of a participant in a collectively bargained plan that provided a monthly benefit increase of \$1 per year of service for each year over a five-year contract period with the first increase implemented at the contract's effective date. A worker with 20 years of service at the beginning of the five-year period would receive benefits increases of \$21 per month if he retired at the end of the first year (the \$1 per month per year of service increase times 21 years of service), \$44 per month if he retired at the end of the second year (both the first and second \$1 monthly increases per year of service times 22 years of service), \$69 if he retired after the third year, \$96 after the fourth, or \$125 if he retired after the fifth year and the plan remained in existence. Assume the plan terminated under PBGC-trusteeship shortly after the fifth increase became effective (just over four years into the contract period). Each of the first three \$1 benefit increases would be fully guaranteed at termination

because each increase would be worth \$24 at that point (\$1 per year of service times 24 years of service) and each would have been in effect for at least 2 years. Recall that PBGC guarantees a minimum of \$20 of a benefit increase once it has been in effect for one year and \$40 per month after 2 years. Only \$20 of the fourth \$24 increase would be guaranteed under the phase-in limitation because the increase had been in effect more than one year but less than two. The fifth increase would not be payable because it had been in effect less than one year and thus was not guaranteed. The phase-in limitation reduced the benefits of this participant from the \$120 he would have received had he retired from an ongoing plan on the plan's termination date (\$5 per month increase per year of service times 24 years of service) to \$92 (\$3 per month increase per year of service times 24 years of service plus \$20 plus \$0).

Table 3: Impact of the Phase-In Limitation on Benefits

Participant Category	Number of Participants Affected by the Phase-In Limitation	Present Value of Benefits Before Applying the Phase-In Limitation (<i>Dollars in millions</i>)	Present Value of Benefits After Applying the Phase-In Limitation (<i>Dollars in millions</i>)	Percent of Pre-limitation Benefit Received	Present Value of Total Benefits Lost Due to the Phase-In Limitation (<i>Dollars in millions</i>)	Average Loss of Present Value per Affected Participant
Retired	253	\$31.2	\$30.4	97%	\$0.8	\$3,200
Separated Vested	20	\$0.1	\$0.1	77%	**	***
Active Vested	146	\$22.0	\$21.8	99%	\$0.2	\$1,400
Total	419	\$53.3	\$52.3	98%	\$1.0	\$2,500

Source: PBGC

** Less than \$0.05 million

*** No calculation made

V. Observations

This study looked at the impact of three PBGC benefit limitations. We found that these limitations reduced the benefits of at least some participants in 8 of the 10 of the companies in our sample and 17 of the 22 plans they sponsored. Affected participants tended to be concentrated either in plans whose participants had specific characteristics, such as high benefits, or in plans with certain features, such as large supplemental benefits.

About 5.5 percent of all participants in our sample experienced, or will experience, reduced PBGC-paid benefits because of these limitations. Even in the 17 affected plans, only 10.5 percent of the participants received, or will receive, reduced benefits. Thus, these three limitations did not change the benefits for the vast majority of participants in our sample.

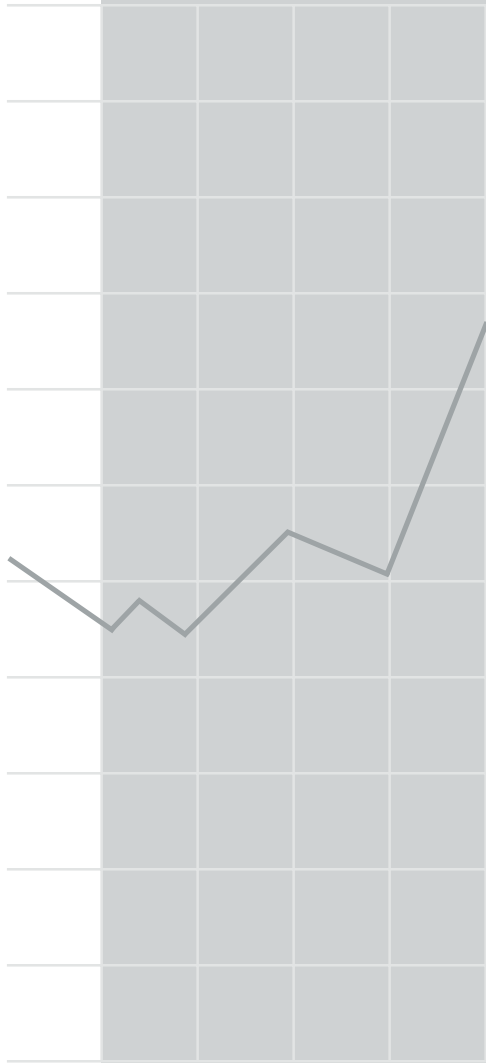
The impacts of these limitations, while modest from a population perspective, were substantial for some participants. The present value of the average benefit loss from these three limitations combined was \$1,500 if measured across the 90,488 participants in all 22 plans in our study, \$2,900 if measured across the 47,128 participants in the 17 affected plans, but \$27,400 if measured across only the 4,965 participants who lost some of their benefits. This latter loss is substantial, but it is only about 16 percent of the average present value of vested plan benefits (\$175,100) for these affected participants. On an individual basis, the benefit reductions could be quite severe. More than 100 of the almost 5,000 participants who lost benefits because of these limitations lost more than 50 percent of their vested plan benefits.

In our sample, the maximum insurance limitation had, by far, the largest impact of the three limitations. This limitation reduced the benefits of more than 80 percent of participants affected by any of the three limitations and was responsible for more than 95 percent of the aggregate benefit reductions they experienced. Pilots and flight engineers, who have higher than average pension benefits, represented the majority of participants who lost benefits because of this limitation. We believe our sample contains a higher proportion of high earners than would be found in either the plans PBGC has trusted or the plans it insures. Thus, we again caution the reader that these results, while informative, should not be generalized beyond the plans in our sample. We are confident that the maximum insurance limitation, of the three, affects the benefits of the greatest number of participants and reduces benefits by the greatest average amount, but we also believe the estimate that it reduces the benefits of 4.5 percent of participants in PBGC-trusted plans represents an upper limit and that the maximum limitation probably reduced the benefits of a somewhat smaller proportion of participants in all post-PPA trusted plans.

Compared to the maximum insurance limitation, the accrued-at-normal limitation reduced the benefits of far fewer participants, about 10 percent as many, and by a much smaller average amount, only about \$8,800 in present value terms compared with \$32,000. However, each of these two limitations reduced the benefits of the participants it affected by about 17 percent. Early retirement supplements are more prevalent among plans in the manufacturing sector, which was underrepresented in our sample, than in other sectors. This suggests that our study's estimate that the accrued-at-normal limitation reduced the benefits of 0.5 percent of participants probably underestimates the limitation's impact on participants in all plans PBGC trusted under PPA provisions.

Our study also indicates that the phase-in limitation reduced the benefits of about 0.5 percent of all participants in our sample. The average reduction in the present value of lifetime benefits for affected participants was only \$2,500 or about 2 percent of their total vested plan benefits. The phase-in limitation has a small impact on participant benefits because PBGC gradually guarantees the benefit improvement over several years. The impact of this limitation depends on both when a benefit enhancement is made relative to the date of the plan's termination and the size of the enhancement. The design of the phase-in limitation is such that most small benefit improvements provided by a plan's sponsor are fully guaranteed in less than 5 years. PBGC's guarantee takes the full 5 years to phase-in if the benefit enhancement is \$100 per month or larger. However, unless the plan adopted a benefit improvement less than one year before the plan terminated, PBGC will guarantee at least a part of the increase. Again, because we believe collectively bargained plans are more likely than other types of plans to be affected by the phase-in limitation and because these plans are underrepresented in our sample, we believe the phase-in limitation has probably affected the benefits of more than 0.5 percent of the participants in plans PBGC trustee under PPA provisions.

This study presents new but preliminary findings. The results of this study suggest fewer participants are affected by these three statutory limitations (5.5 percent) than we previously assumed (10 to 15 percent). However, because our sample is nonrandom, we cannot generalize these findings to either the population of plans PBGC has trustee or the population of plans it insures and might trustee in the future. We are encouraged, however, that the results do not contradict our long-held belief that these limitations reduce the benefits of relatively few of the participants in the plans PBGC trustee. To make our results more applicable to the entire population of plans PBGC has trustee since PPA was enacted, we are expanding our sample to include more companies and plans from the manufacturing and other non-air transportation sectors of the economy. However, the new plans will continue to be drawn from companies that had large unfunded liabilities and terminated after PPA's enactment. Thus, the expanded sample will also be nonrandom and we will need to remain cautious about making generalizations from the analyses we perform on it.



APPENDIX S

Single-Employer Data Tables

Table S-1

Net Financial Position of PBGC's Single-Employer Program (1980-1999)

Fiscal Year	Assets (in millions)	Liabilities (in millions)	Net Position (in millions)
1980	\$467	\$561	-\$95
1981	515	704	-189
1982	835	1,168	-333
1983	1,085	1,608	-523
1984	1,063	1,525	-462
1985	1,155	2,480	-1,325
1986	1,740	5,566*	-3,826*
1987	2,163	3,712	-1,549
1988	2,422	3,965	-1,543
1989	3,059	4,183	-1,124
1990	2,797	4,710	-1,913
1991	5,422	7,925	-2,503
1992	6,381	9,118	-2,737
1993	8,267	11,164	-2,897
1994	8,281	9,521	-1,240
1995	10,371	10,686	-315
1996	12,043	11,174	869
1997	15,314	11,833	3,481
1998	17,631	12,619	5,012
1999	18,431	11,393	7,038

Source: PBGC Annual Report (1980-1999).

*1986 values include \$1.8 billion in liabilities that were subsequently returned by a Supreme Court ruling to a reorganized LTV Corporation.
Due to rounding of individual items, rows may not add across.

Table S-2

**PBGC Premium Revenue, Benefit Payments and Expenses (1980-1999)
Single-Employer Program**

Fiscal Year	Total Premium Revenue (in millions)	Benefit Payments (in millions)	Administrative & Investment Expenses (in millions)	Premiums Minus Benefits Paid and Expenses (in millions)
1980	\$71	\$37	\$20	\$14
1981	75	57	21	-3
1982	80	94	24	-38
1983	82	137	27	-82
1984	81	169	30	-118
1985	82	170	33	-121
1986	201	261	33	-93
1987	268	300	36	-68
1988	465	356	48	61
1989	603	353	45	205
1990	659	369	63	227
1991	741	514	71	156
1992	875	634	97	144
1993	890	678	107	105
1994	955	719	135	101
1995	838	761	138	-61
1996	1,146	790	150	206
1997	1,067	823	155	89
1998	966	847	158	-39
1999	902	901	161	-160

Source: PBGC Annual Report (1980-1999).

Due to aggregation and rounding of individual items, figures may not add up to totals in other tables.

Table S-3

PBGC Benefit Payments, Payees and Deferred Payees (1980-1999) Single-Employer Program

Fiscal Year	PERIODIC PENSION PAYMENTS				LUMP SUM PAYMENTS			ALL PAYMENTS		
	Total (in millions)	Payees in Year (in thousands)	Average Monthly Payment	Median Monthly Payment	Total (in millions)	Payees in Year (in thousands)	Average Payment	Total (in millions)	Payees in Year (in thousands)	Deferred Payees (in thousands)
1980	\$34	28	\$124	\$91	\$3	2	\$1,623	\$37	30	25
1981	50	36	129	87	7	5	1,484	57	41	33
1982	79	51	165	79	15	5	2,938	94	56	55
1983	129	55	206	96	8	3	2,511	137	58	74
1984	166	65	232	112	3	1	1,942	169	66	83
1985	166	75	226	128	4	2	1,782	170	77	94
1986	259	91	275	141	2	1	2,188	261	92	99
1987	298	110	248	174	2	1	1,770	300	111	104
1988	347	110	265	178	9	2	3,515	356	112	104
1989	342	107	261	180	11	5	3,051	353	112	109
1990	356	110	262	184	13	6	2,437	369	116	115
1991	499	140	338	189	15	6	2,558	514	146	183
1992	617	150	359	232	17	6	3,078	634	156	184
1993	665	157	379	234	13	5	2,686	678	162	188
1994	699	170	359	238	20	7	2,818	719	176	198
1995	739	182	344	232	22	6	3,335	761	187	210
1996	770	199	328	225	20	7	2,757	790	206	240
1997	800	204	316	212	23	9	2,629	823	213	260
1998	826	208	313	208	21	9	2,198	847	216	263
1999	844	214	311	208	56	16	3,553	901	229	317

Sources: PBGC Participant System (PRISM), fiscal year calculations, PBGC Management Reports, and PBGC Benefit Payment Reports.

Lump Sum payments include cash-outs of pensions with de minimis present values and backpayments to current pensioners.

Since some payees received both pensions and lump sum payments, total number of payees may be less than the sum of pensioners and lump sum recipients.

Excludes participants in plans that are in probable termination status as of end of fiscal year.

Annual deferred payee totals have been adjusted to reflect subsequent improvements in data quality.

Table S-4

**PBGC Payees and Benefit Payments by Industry (1999)
Single-Employer Program**

Industry	Payees		Benefit Payments		Mean Monthly Pension	Median Monthly Pension
AGRICULTURE, MINING, AND CONSTRUCTION	5,614	2.5%	\$24,232,166	2.7%	\$310	\$238
MANUFACTURING	143,973	63.0%	514,004,350	57.1%	289	194
Apparel and Textile Mill Products	25,379	11.1%	47,123,684	5.2%	173	88
Fabricated Metal Products	15,475	6.8%	51,100,403	5.7%	267	202
Food and Tobacco Products	5,998	2.6%	15,087,473	1.7%	210	155
Machinery and Computer Equipment	20,952	9.2%	74,485,611	8.3%	280	217
Motor Vehicle Equipment	5,164	2.3%	16,190,716	1.8%	256	207
Primary Metals	45,422	19.9%	236,151,825	26.2%	416	356
Rubber and Miscellaneous Plastics	6,508	2.8%	22,674,434	2.5%	276	226
Other Manufacturing	19,075	8.3%	51,190,203	3.7%	216	145
TRANSPORTATION AND PUBLIC UTILITIES	55,665	24.4%	309,801,909	34.4%	455	334
Air Transportation	43,040	18.8%	276,162,731	30.7%	522	394
Other Transportation	12,541	5.5%	33,492,322	3.7%	216	165
Public Utilities	84	*	146,856	*	202	141
WHOLESALE TRADE	6,232	2.7%	15,969,727	1.8%	211	131
RETAIL TRADE	8,669	3.8%	13,959,129	1.5%	138	70
FINANCE, INSURANCE, AND REAL ESTATE	1,438	0.6%	4,259,257	0.5%	261	152
SERVICES	6,663	2.9%	18,280,374	2.0%	233	143
NON-PROFIT ORGANIZATIONS	272	0.1%	404,611	*	102	52
TOTAL	228,526	100.0%	\$900,911,522	100.0%	\$311	\$208

Sources: PBGC Participant System (PRISM), fiscal year calculations, and PBGC Management Reports.

Due to aggregation and rounding of individual items, totals may not add up to totals in other tables and percentages may not add up to 100 percent.

*Less than .05 of one percent.

Table S-5

**PBGC Payees and Benefit Payments by Gender and Age (1999)
Single-Employer Program**

Age	TOTAL PERIODIC PENSION PAYEES			MALE			FEMALE		
	Payees		Average Monthly Pension	Payees		Average Monthly Pension	Payees		Average Monthly Pension
Younger than 60	19,194	100.0%	\$296	11,660	60.7%	\$348	7,534	39.3%	\$220
60 - 64	27,676	100.0%	346	19,808	71.6%	402	7,868	28.4%	218
65 - 69	39,337	100.0%	351	27,397	69.6%	422	11,940	30.4%	199
70 - 74	42,506	100.0%	332	27,621	65.0%	414	14,885	35.0%	187
75 - 79	40,266	100.0%	309	24,059	59.7%	403	16,207	40.3%	171
80 - 84	26,826	100.0%	268	14,749	55.0%	363	12,077	45.0%	147
85 and Older	18,356	100.0%	209	9,321	50.8%	283	9,035	49.2%	125
TOTAL	214,161	100.0%	\$311	134,615	62.9%	\$391	79,546	37.1%	\$178

Sources: PBGC Participant System (PRISM), fiscal year calculations, and PBGC Management Reports.

Due to rounding of individual items, totals may not add up exactly to totals in other tables and percentages may not add up to 100 percent.

Due to a slight change in the methodology used to prepare this table, differences with previous versions of this table may be noted.

Table S-6

**PBGC Payees and Benefit Payments by Size of Payment (1999)
Single-Employer Program**

Monthly Payment	Periodic Pension Payees		Periodic Pension Payments	
Less than \$50	21,884	10.2%	\$8,680,330	1.0%
\$50 - \$99	36,736	17.2%	34,661,881	4.1%
\$100 - \$149	25,170	11.8%	38,930,989	4.6%
\$150 - \$199	20,154	9.4%	43,894,068	5.2%
\$200 - \$249	16,865	7.9%	47,157,940	5.6%
\$250 - \$299	12,615	5.9%	43,290,406	5.1%
\$300 - \$349	11,455	5.3%	46,546,934	5.5%
\$350 - \$399	9,617	4.5%	45,393,222	5.4%
\$400 - \$449	9,579	4.5%	51,302,755	6.1%
\$450 - \$499	7,961	3.7%	47,895,718	5.7%
\$500 - \$549	7,031	3.3%	46,911,080	5.6%
\$550 - \$599	5,955	2.8%	43,698,039	5.2%
\$600 - \$749	12,359	5.8%	105,840,804	12.5%
\$750 - \$999	9,340	4.4%	102,485,386	12.1%
\$1,000 - \$1,499	5,228	2.4%	79,382,426	9.4%
\$1,500 or more	2,212	1.0%	58,410,070	6.9%
TOTAL	214,161	100.0%	\$844,482,050	100.0%

Sources: PBGC Participant System (PRISM), fiscal year calculations, and PBGC Management Reports.

Due to aggregation and rounding of individual items, totals may not add up exactly to totals in other tables and percentages may not add up to 100 percent.

Table S-7

**PBGC Payees and Benefit Payments by Date of Plan Termination (1999)
Single-Employer Program**

Fiscal Year of Plan Termination	Payees Receiving Payment (1999)		Benefit Payments (1999)	
Prior to 1980	14,128	6.2%	\$23,370,844	2.6%
1980	4,781	2.1%	11,351,455	1.3%
1981	7,616	3.3%	13,606,863	1.5%
1982	15,475	6.8%	47,394,219	5.3%
1983	10,689	4.7%	41,122,018	4.6%
1984	2,008	0.9%	4,807,631	0.5%
1985	7,887	3.5%	23,764,762	2.6%
1986	20,268	8.9%	103,160,033	11.5%
1987	9,084	4.0%	36,116,542	4.0%
1988	9,888	4.3%	35,102,559	3.9%
1989	8,060	3.5%	19,438,918	2.2%
1990	6,385	2.8%	19,640,970	2.2%
1991	46,712	20.4%	274,246,299	30.4%
1992	15,446	6.8%	68,389,256	7.6%
1993	5,662	2.5%	17,971,652	2.0%
1994	12,864	5.6%	60,268,792	6.7%
1995	7,351	3.2%	29,676,301	3.3%
1996	9,281	4.1%	26,403,225	2.9%
1997	11,536	5.0%	37,216,504	4.1%
1998	2,818	1.2%	7,136,437	0.8%
1999	587	0.3%	726,241	0.1%
TOTAL	228,526	100.0%	\$900,911,522	100.0%

Sources: PBGC Participant System (PRISM), fiscal year calculations, and PBGC Management Reports.

Due to rounding of individual items, totals may not add up exactly to totals in other tables and percentages may not add up to 100 percent.

Table S-8

**PBGC Payees and Benefit Payments by Size of Trusteed Plan (1999)
Single-Employer Program**

Number of Plan Participants	Payees		Payments (in millions)		Average Monthly Pension Payment	Median Monthly Pension
Under 100	18,968	8.3%	\$48.2	5.3%	\$206	\$130
100 - 499	46,452	20.3%	123.4	13.7%	210	139
500 - 999	32,053	14.0%	101.1	11.2%	250	143
1,000 and Over	131,053	57.3%	628.2	69.7%	375	285
TOTAL	228,526	100.0%	\$900.9	100.0%	\$311	\$208

Sources: PBGC Participant System (PRISM), fiscal year calculations, and PBGC Management Reports.

Due to aggregation and rounding of individual items, totals may not equal those in other tables and percentages may not add up to 100 percent.

Table S-9

Bankruptcies and Underfunding Among Publicly Traded Firms (1980-1998)

Year	Total Bankruptcies	Bankrupt Firms With Fully Funded Defined Benefit Plans Only		Bankrupt Firms With Any Underfunded Defined Benefit Plans	
1980	86	25	29.1%	1	1.2%
1981	76	30	39.5%	2	2.6%
1982	93	23	24.7%	3	3.2%
1983	86	22	25.6%	6	7.0%
1984	113	23	20.4%	1	0.9%
1985	128	35	27.3%	1	0.8%
1986	128	30	23.4%	7	5.5%
1987	95	20	21.1%	3	3.2%
1988	122	26	21.3%	5	4.1%
1989	150	29	19.3%	8	5.3%
1990	149	45	30.2%	9	6.0%
1991	145	41	28.3%	5	3.4%
1992	99	24	24.2%	3	3.0%
1993	114	27	23.7%	6	5.3%
1994	60	15	25.0%	0	0.0%
1995	94	20	21.3%	5	5.3%
1996	69	12	17.4%	4	5.8%
1997	105	23	21.9%	1	1.0%
1998	104	25	24.0%	2	1.9%
TOTAL	2,016	495	24.6%	72	3.6%

Sources: Standard and Poor's Compustat Data and New Generations Database and Yearbook, various issues.
Table does not reflect any PBGC claims experience.

Table S-10

PBGC Terminations and Claims (1975-1999) Single-Employer Program

Fiscal Year	Standard Terminations	Trusteed Terminations	Assets (in millions)	Liabilities (in millions)	Gross Claims (in millions)	Recoveries (in millions)	Net Claims (in millions)
1975	2,470	100	\$18.9	\$56.0	\$37.2	\$5.1	\$32.1
1976	8,932	171	41.6	87.9	46.3	28.5	17.8
1977	7,202	130	17.2	51.8	34.6	9.2	25.4
1978	5,158	103	43.3	124.4	81.1	8.9	72.2
1979	4,810	82	31.3	77.3	46.1	7.2	38.8
1980	3,933	104	74.3	166.5	92.3	32.2	60.1
1981	4,949	137	67.1	174.3	107.2	39.3	67.9
1982	6,003	131	145.6	456.2	310.7	44.3	266.4
1983	6,730	149	210.8	412.1	201.3	40.5	160.8
1984	7,621	99	19.5	48.3	28.8	3.5	25.3
1985	8,635	115	39.9	260.9	221.0	14.5	206.5
1986	6,829	132	277.5	1,164.0	886.5	81.1	805.4
1987	10,865	105	140.0	350.7	210.6	32.8	177.8
1988	10,790	99	109.3	379.4	270.1	21.5	248.6
1989	11,400	85	85.5	195.7	110.1	12.4	97.7
1990	11,800	101	109.3	219.6	110.3	7.7	102.7
1991	8,600	172	1,481.6	3,028.4	1,546.8	233.4	1,313.5
1992	6,670	152	250.4	829.8	579.4	77.9	501.5
1993	5,320	122	123.5	261.0	137.4	15.9	121.5
1994	3,950	131	303.8	794.5	490.7	32.8	458.0
1995	3,870	117	235.3	394.9	159.6	6.8	152.8
1996	3,809	83	252.2	403.9	151.8	26.3	125.5
1997	3,497	67	436.7	663.5	226.8	8.7	218.1
1998	2,475	51	166.9	262.2	95.3	2.6	92.6
1999	1,969	37	254.6	351.1	96.5	3.8	92.7
TOTAL	158,287	2,775	\$4,936.0	\$11,214.4	\$6,278.4	\$796.7	\$5,481.7

Sources: PBGC Fiscal Year Closing File (9/30/99) and PBGC Case Administration System.

Due to rounding of individual items, values may not add up across columns.

Claims figures shown in this table are calculated on a plan basis and identified with fiscal year of plan termination for each plan.

1975 termination and claims values are for 7/1/74 to 6/30/75. 1976 values are for 7/1/75 to 9/30/76. For 1977 on, values are for 10/1 of the prior calendar year to 9/30 of the current calendar year.

The annual numbers of trusteed terminations shown in this table may differ from those reported elsewhere, as they reflect the fiscal year of plan termination, rather than the fiscal year in which the loss is recorded.

Values are subject to change as PBGC completes reviewing, establishes termination dates, and determines recoveries.

Table S-11
PBGC Claims (1975-1999)
Single-Employer Program

Fiscal Year	Total Claims	Claims of Top 10 Firms and Percent of Total Annual Claims		Other Claims and Percent of Total Annual Claims	
1975	\$37,180,226	—	—	\$37,180,226	100.0%
1976	46,275,083	—	—	46,275,083	100.0%
1977	34,590,631	—	—	34,590,631	100.0%
1978	81,063,015	—	—	81,063,015	100.0%
1979	46,057,726	—	—	46,057,726	100.0%
1980	92,288,503	—	—	92,288,503	100.0%
1981	107,153,344	—	—	107,153,344	100.0%
1982	310,664,367	—	—	310,664,367	100.0%
1983	201,321,684	—	—	201,321,684	100.0%
1984	28,770,078	—	—	28,770,078	100.0%
1985	220,981,335	\$180,568,290	81.7%	40,413,044	18.3%
1986	886,502,270	722,321,849	81.5%	164,180,422	18.5%
1987	210,635,701	35,566,557	16.9%	175,069,144	83.1%
1988	270,060,020	186,046,772	68.9%	84,013,249	31.1%
1989	110,135,846	—	—	110,135,846	100.0%
1990	110,336,897	—	—	110,336,897	100.0%
1991	1,546,828,673	1,371,920,378	88.7%	174,908,295	11.3%
1992	579,397,343	439,262,437	75.8%	140,134,906	24.2%
1993	137,448,213	—	—	137,448,213	100.0%
1994	490,716,046	326,302,449	66.5%	164,413,597	33.5%
1995	159,613,039	—	—	159,613,039	100.0%
1996	151,774,155	—	—	151,774,155	100.0%
1997	226,832,605	—	—	226,832,605	100.0%
1998	95,259,234	—	—	95,259,234	100.0%
1999	96,504,428	—	—	96,504,428	100.0%
TOTAL	\$6,278,390,463	\$3,261,988,732	52.0%	\$3,016,401,731	48.0%

Sources: PBGC Fiscal Year Closing File (9/30/99) and PBGC Case Administration System.
 Due to rounding, percentages may not add up to 100 percent.
 Claims figures in this table are calculated on a plan basis.
 Annual claims for Top 10 firms are summations of all claims in that fiscal year associated with the Top 10 firms.
 Values are subject to change as PBGC completes reviewing, establishes termination dates, and determines recoveries.
 See Table S-12 for a list of the Top 10 firms with the largest value of claims.

Table S-12

Top 10 Firms Presenting Claims (1975-1999) Single-Employer Program

Top 10 Firms	Number of Plans	Fiscal Years of Plan Terminations	Claims (by firm)	Vested Participants	Average Claim Per Vested Participant	Percent of Total Claims (1975-1999)
1 Pan American Air	3	1991, 1992	\$841,082,434	37,472	\$22,446	13.4%
2 Eastern Air Lines	7	1991	552,730,569	51,182	10,799	8.8%
3 Wheeling Pitt Steel	7	1986	495,235,029	22,144	22,364	7.9%
4 Sharon Steel	5	1994	290,787,636	6,886	42,229	4.6%
5 LTV Republic Steel	1	1986	221,920,051	8,208	27,037	3.5%
6 Kaiser Steel	4	1987, 1988	221,613,329	8,403	26,373	3.5%
7 Allis-Chalmers*	11	1985, 1986	185,735,060	9,055	20,512	3.0%
8 CF&I Steel	1	1992	184,023,622	4,239	43,412	2.9%
9 Uniroyal Plastics	1	1992	149,930,778	5,212	28,766	2.4%
10 Blaw-Knox	6	1992, 1994	118,930,225	5,659	21,016	1.9%
Top 10 Total	46		3,261,988,732	158,460	20,586	52.0%
All Other Total	2,729		3,016,401,731	493,202	6,116	48.0%
TOTAL	2,775		\$6,278,390,463	651,662	\$9,634	100.0%

Sources: PBGC Fiscal Year Closing File (9/30/99), PBGC Case Administration System, and PBGC Participant System (PRISM).

Due to rounding, percentages may not add up to 100 percent.

Data in this table has been calculated on a firm basis and includes all plans of each firm.

* Does not include 1997 termination of plan sponsored by the reorganized Allis-Chalmers Corporation.

Table S-13

**PBGC Claims by Plan Funding Ratio at Termination (1975-1999)
Single-Employer Program**

Funding Ratio	Claims	
Under 25%	\$3,104,330,279	49.4%
25% - 49%	1,564,953,356	24.9%
50% - 74%	1,471,974,505	23.4%
75% and Over	137,132,323	2.2%
TOTAL	\$6,278,390,463	100.0%

Sources: PBGC Fiscal Year Closing File (9/30/99) and PBGC Case Administration System.

Calculations represent aggregated claims over the period 1975-1999.

Values and distributions are subject to change as PBGC completes reviewing, establishes termination dates, and determines recoveries.

Funding ratios are calculated as the ratio of trust plan assets to plan benefit liabilities before recoveries from employers.

Due to rounding of individual items, percentages may not add up to 100 percent.

Table S-14

Average Claim per Vested Participant by Plan Size (1975-1999) Single-Employer Program

Number of Plan Participants	Vested Participants	Plans	Claims			Claims (1999 Dollars)		Average Claim Per Participant
			Claims	Average Claim Per Participant	Claims (1999 Dollars)	Average Claim Per Participant (1999 Dollars)		
Under 100	63,909	1,826	\$372,782,202	5.9%	\$5,833	\$508,145,236	5.9%	\$7,951
100-999	245,658	845	1,509,393,469	24.0%	6,144	2,173,809,076	25.0%	8,849
1,000-4,999	188,359	91	1,827,353,859	29.1%	9,701	2,611,796,143	30.1%	13,866
5,000-9,999	70,046	9	1,079,218,498	17.2%	15,407	1,495,007,660	17.2%	21,343
10,000 and Over	83,690	4	1,489,642,435	23.7%	17,800	1,894,699,854	21.8%	22,640
TOTAL	651,662	2,775	\$6,278,390,463	100.0%	\$9,634	\$8,683,457,969	100.0%	\$13,325

Sources: PBGC Fiscal Year Closing File (9/30/99), PBGC Case Administration System, and Bureau of Labor Statistics.

Claim values and distributions are subject to change as PBGC completes reviewing, establishes termination dates, and determines recoveries.

Claims calculations represent aggregated and average counts of plans, claims, and participants over the period 1975-1999.

Due to rounding of individual items, percentages may not add up to 100 percent.

Claims in 1999 dollars are calculated using Consumer Price Index - Urban Consumers.

Table S-15

PBGC Claims by Industry (1975-1999) Single-Employer Program

Industry	Total Claims		Plans	Vested Participants
AGRICULTURE, MINING, AND CONSTRUCTION	\$122,267,764	1.9%	152	15,330
MANUFACTURING	3,986,824,000	63.5%	1,633	381,808
Chemical and Allied Products	69,409,216	1.1%	29	6,848
Fabricated Metal Products	447,924,033	7.1%	322	42,910
Food and Tobacco Products	110,410,416	1.8%	130	18,825
Machinery and Computer Equipment	566,574,490	9.0%	200	51,541
Motor Vehicle Equipment	205,542,015	3.3%	84	25,347
Paper and Allied Products	37,244,687	0.6%	66	6,099
Primary Metals	1,902,087,507	30.3%	219	108,766
Rubber and Miscellaneous Plastics	225,071,209	3.6%	66	17,138
Other Manufacturing	422,560,427	6.7%	517	104,334
TRANSPORTATION AND PUBLIC UTILITIES	1,704,087,432	27.1%	191	136,257
Air Transportation	1,506,937,409	24.0%	25	99,218
Other Transportation and Utilities	197,150,023	3.1%	166	37,039
WHOLESALE TRADE	61,743,481	1.0%	194	20,157
RETAIL TRADE	153,152,118	2.4%	254	43,903
FINANCE, INSURANCE, AND REAL ESTATE	23,080,596	0.4%	89	8,230
SERVICES	227,235,073	3.6%	262	45,977
TOTAL	\$6,278,390,463	100.0%	2,775	651,662

Sources: PBGC Fiscal Year Closing File (9/30/99) and PBGC Case Administration System.
 Values and distributions are subject to change as PBGC completes reviewing, establishes termination dates, and determines recoveries.
 Due to rounding of individual items, percentages may not add up to 100 percent.

Table S-16

**PBGC-Covered Plan Participants (1980-1999)
Single-Employer Program**

Year	Total Covered Participants (in thousands)	In Plans with 10,000+ Participants (in thousands)	In Plans with 5,000-9,999 Participants (in thousands)	In Plans with 1,000-4,999 Participants (in thousands)	In Plans with 250-999 Participants (in thousands)	In Plans with 100-249 Participants (in thousands)	In Plans with 25-99 Participants (in thousands)	In Plans with <25 Participants (in thousands)
1980	27,518	12,044	2,833	5,776	3,852	1,436	1,064	513
1981	28,076	12,304	2,894	5,900	3,901	1,455	1,094	528
1982	28,182	12,190	2,867	6,077	3,979	1,484	1,069	516
1983	28,701	12,770	2,908	6,030	3,839	1,536	1,090	528
1984	29,637	12,707	3,010	6,503	4,146	1,588	1,131	552
1985	29,809	12,724	3,164	6,579	4,032	1,585	1,164	561
1986	30,043	12,800	3,236	6,596	4,104	1,593	1,155	559
1987	31,200	13,522	3,168	6,728	4,434	1,644	1,166	538
1988	31,461	13,820	3,141	6,844	4,401	1,581	1,150	524
1989	31,574	14,253	3,356	6,881	3,984	1,492	1,108	500
1990	31,633	14,336	3,351	6,989	4,064	1,429	1,023	441
1991	31,851	14,759	3,433	6,945	3,968	1,415	946	385
1992	32,056	15,416	3,520	6,997	3,694	1,276	825	328
1993	32,271	15,895	3,617	7,000	3,552	1,176	758	273
1994	32,372	16,258	3,814	6,942	3,292	1,120	698	248
1995	32,634	16,934	3,771	6,908	3,136	1,062	625	198
1996	32,724	17,076	3,843	6,896	3,128	1,005	591	185
1997	33,214	18,046	3,787	6,767	3,008	919	527	160
1998	33,545	18,568	3,905	6,719	2,883	847	476	147
1999	33,804	19,591	3,869	6,355	2,662	776	422	130

Source: PBGC Premium Filings, various years.

1999 figures are estimates from PBGC internal calculations.

1998 estimates reported last year have been updated to reflect actual premium filings.

Table S-17

**PBGC-Insured Plans (1980-1999)
Single-Employer Program**

Year	Total Insured Plans	Insured Plans with 10,000+ Participants	Insured Plans with 5,000-9,999 Participants	Insured Plans with 1,000-4,999 Participants	Insured Plans with 250-999 Participants	Insured Plans with 100-249 Participants	Insured Plans with 25-99 Participants	Insured Plans with <25 Participants
1980	95,439	349	365	2,858	7,439	8,512	19,069	56,847
1981	99,892	344	360	3,010	7,803	8,928	19,956	59,491
1982	103,423	393	411	2,965	8,142	9,316	20,646	61,550
1983	106,668	377	413	2,908	8,006	9,676	21,123	64,165
1984	111,491	386	428	3,178	8,470	10,005	21,891	67,133
1985	112,208	354	435	3,125	8,230	10,003	22,609	67,452
1986	111,944	379	447	3,158	8,186	9,859	22,442	67,473
1987	111,351	411	450	3,276	9,036	10,339	22,373	65,466
1988	108,279	412	446	3,314	8,799	9,965	22,028	63,315
1989	101,724	427	462	3,211	8,057	9,395	21,113	59,059
1990	91,899	458	477	3,400	8,085	8,976	19,464	51,039
1991	82,717	495	493	3,353	7,986	8,867	17,888	43,635
1992	71,589	505	504	3,367	7,402	7,991	15,410	36,410
1993	63,778	504	517	3,336	7,064	7,358	14,392	30,607
1994	57,010	524	553	3,361	6,682	6,941	13,100	25,849
1995	53,589	528	559	3,308	6,743	6,850	11,674	23,927
1996	48,748	531	556	3,280	6,217	6,225	10,931	21,008
1997	43,902	563	550	3,199	5,962	5,734	9,822	18,072
1998	41,462	570	565	3,139	5,693	5,255	8,788	17,452
1999	37,536	603	555	2,933	5,271	4,803	7,779	15,592

Source: PBGC Premium Filings, various years.

1999 figures are estimates from PBGC internal calculations.

1998 estimates reported last year have been updated to reflect actual premium filings.

Table S-18

**PBGC-Insured Plans, Participants and Premiums by Industry (1999)
Single-Employer Program**

Industry	Covered Participants		Premiums		Insured Plans	
AGRICULTURE, MINING, AND CONSTRUCTION	675,420	2.0%	\$19,890,327	2.2%	2,807	7.5%
MANUFACTURING	17,252,012	51.0%	474,501,098	52.6%	12,079	32.2%
Chemical and Allied Products	1,782,585	5.3%	42,441,021	4.7%	958	2.6%
Fabricated Metal Products	1,013,744	3.0%	35,565,698	3.9%	2,291	6.1%
Food and Tobacco Products	1,289,686	3.8%	37,398,248	4.1%	972	2.6%
Machinery and Computer Equipment	1,410,500	4.2%	34,046,326	3.8%	1,173	3.1%
Motor Vehicle Equipment	1,885,872	5.6%	52,902,402	5.9%	416	1.1%
Paper and Allied Products	802,267	2.4%	20,882,612	2.3%	638	1.7%
Primary Metals	889,059	2.6%	32,993,719	3.7%	599	1.6%
Rubber and Miscellaneous Plastics	455,568	1.3%	12,022,638	1.3%	532	1.4%
Other Manufacturing	7,722,731	22.8%	206,248,434	22.9%	4,500	12.0%
TRANSPORTATION AND PUBLIC UTILITIES	3,737,366	11.1%	97,097,121	10.8%	1,586	4.2%
Air Transportation	605,452	1.8%	20,787,037	2.3%	96	0.3%
Other Transportation	620,571	1.8%	14,647,548	1.6%	638	1.7%
Public Utilities	2,511,343	7.4%	61,662,535	6.8%	852	2.3%
WHOLESALE TRADE	798,106	2.4%	18,414,108	2.0%	3,302	8.8%
RETAIL TRADE	2,259,956	6.7%	59,651,643	6.6%	1,949	5.2%
FINANCE, INSURANCE, AND REAL ESTATE	4,148,354	12.3%	102,100,241	11.3%	4,292	11.4%
SERVICES	3,937,864	11.6%	102,253,512	11.3%	7,370	19.6%
NON-PROFIT ORGANIZATIONS	994,903	2.9%	28,091,950	3.1%	4,151	11.1%
TOTAL	33,803,981	100.0%	\$902,000,000	100.0%	37,536	100.0%

Source: PBGC Premium Filings.

Due to aggregation and rounding of individual items, totals may not add up to totals in other tables and percentages may not add up to 100 percent.

Table S-19

**PBGC-Covered Plan Participants by Participant Status (1980-1997)
Single-Employer Program**

Year	Active Participants	Retired Participants	Separated Vested Participants
1980	77.6%	16.0%	6.4%
1981	76.8%	16.3%	6.8%
1982	75.3%	17.2%	7.5%
1983	73.8%	18.0%	8.2%
1984	72.8%	18.8%	8.4%
1985	72.2%	18.7%	9.1%
1986	71.3%	19.1%	9.6%
1987	70.1%	19.8%	10.1%
1988	70.6%	18.9%	10.5%
1989	70.1%	18.9%	11.0%
1990	68.1%	19.4%	12.6%
1991	66.4%	20.1%	13.5%
1992	64.2%	20.9%	14.9%
1993	61.9%	21.6%	16.5%
1994	61.2%	21.3%	17.5%
1995	58.0%	22.9%	19.1%
1996	55.5%	23.0%	21.5%
1997	55.0%	23.8%	21.3%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

Due to rounding of individual items, rows may not add up to 100 percent.

1997 figures are estimates from PBGC internal calculations.

1996 estimates reported last year have been updated to reflect actual Form 5500 filings.

Table S-20

**PBGC-Insured Plans and Participants by Total Premium Paid (1999)
Single-Employer Program**

Total Premium Per Participant	Plans	% of Variable Rate Premium-Paying Plans		Participants	% of Participants in Variable Rate Premium- Paying Plans		% of All Participants
		% of All Plans	% of All Participants				
\$19 (NO VARIABLE RATE PREMIUM PAID)	24,378	—	64.9%	29,340,027	—	86.8%	
TOTAL VARIABLE RATE PREMIUM PAYERS	13,158	100.0%	35.1%	4,463,954	100.0%	13.2%	
\$19.01-\$28.99	1,170	8.9%	3.1%	793,367	17.8%	2.3%	
\$29.00-\$38.99	1,147	8.7%	3.1%	388,832	8.7%	1.2%	
\$39.00-\$48.99	1,144	8.7%	3.0%	422,543	9.5%	1.2%	
\$49.00-\$58.99	1,092	8.3%	2.9%	417,953	9.4%	1.2%	
\$59.00-\$68.99	925	7.0%	2.5%	231,835	5.2%	0.7%	
\$69.00-\$78.99	902	6.9%	2.4%	481,032	10.8%	1.4%	
\$79.00-\$88.99	712	5.4%	1.9%	239,894	5.4%	0.7%	
\$89.00-\$98.99	649	4.9%	1.7%	257,664	5.8%	0.8%	
\$99.00-\$108.99	525	4.0%	1.4%	128,324	2.9%	0.4%	
\$109.00-\$118.99	488	3.7%	1.3%	126,788	2.8%	0.4%	
\$119 or More	4,404	33.5%	11.7%	975,722	21.9%	2.9%	
TOTAL ALL PLANS	37,536	—	100.0%	33,803,981	—	100%	

Source: PBGC Premium Filings.

Due to rounding of individual items, percentages may not add up to 100 percent.

Table S-21

**PBGC Premium Receipts by Size of Plan and Type of Premium (1999)
Single-Employer Program**

Number of Plan Participants	Flat Rate Premium		Variable Rate Premium		Total Premium	
Under 100	\$9,754,366	1.5%	\$21,502,960	8.3%	\$31,257,326	3.7%
100 - 499	33,460,756	5.2%	36,988,471	14.2%	70,449,227	8.2%
500 - 999	29,092,682	4.5%	29,747,299	11.5%	58,839,980	6.8%
1,000 - 2,499	59,247,668	9.2%	37,916,575	14.6%	97,164,243	11.0%
2,500 - 4,999	59,462,263	9.3%	35,119,284	13.5%	94,581,547	10.6%
5,000 - 9,999	70,702,557	11.0%	23,887,760	9.2%	94,590,317	10.4%
10,000 and Over	380,555,348	59.3%	74,562,011	28.7%	455,117,359	49.3%
TOTAL	\$642,275,639	100.0%	\$259,724,361	100.0%	\$902,000,000	100.0%
PERCENT OF TOTAL	71%		29%		100%	

Source: PBGC Premium Filings.

Due to aggregation and rounding of individual items, premium totals may not equal those in other tables and percentages may not add up to 100 percent.

"Percent of Total" represent proportions of Flat Rate and Variable Rate Premiums, respectively, of Total Premiums.

Table S-22

**PBGC-Insured Plans and Participants by Variable Rate Premium Status (1992-1999)
Single-Employer Program**

Beginning of Year	Plans Paying Variable Rate Premium	Plans Paying Flat Rate Premium Only	Participants In Plans Paying Variable Rate Premium	Participants In Plans Paying Flat Rate Premium Only	Variable Rate Premium Interest Rate*
1992	30.8%	69.2%	27.4%	72.6%	6.16%
1993	36.4%	63.6%	24.9%	75.1%	5.95%
1994	43.1%	56.9%	34.2%	65.8%	5.00%
1995	38.5%	61.5%	23.8%	76.2%	6.30%
1996	46.8%	53.2%	32.1%	67.9%	4.85%
1997	37.0%	63.0%	19.4%	80.6%	5.24%
1998	35.6%	64.4%	16.6%	83.4%	5.09%
1999	35.1%	64.9%	13.2%	86.8%	4.30%

Source: PBGC Premium Filings.

* Interest rates for valuing vested benefits for PBGC Variable Rate Premium for plans with premium payment years beginning in January of the respective year.

Table S-23

Funding of PBGC-Insured Plans (1980-1997) Single-Employer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Funding Ratio	Underfunding (in millions)	Overfunding (in millions)	PBGC Rate*
1980	\$259,810	\$211,817	123%	\$20,156	\$67,894	8.50%
1981	309,969	212,072	146%	12,043	114,676	9.75%
1982	331,540	206,303	161%	10,263	135,500	10.75%
1983	376,732	241,010	156%	11,783	147,505	9.75%
1984	457,644	280,695	163%	9,876	186,825	9.75%
1985	500,673	308,617	162%	11,182	203,238	9.75%
1986	619,490	406,118	153%	14,719	228,091	8.50%
1987	644,239	463,255	139%	20,692	201,676	7.50%
1988	640,741	450,844	142%	22,341	212,238	8.25%
1989	696,146	517,226	135%	26,340	205,260	7.75%
1990	837,131	604,047	139%	35,689	268,773	7.25%
1991	848,251	687,896	123%	34,485	194,840	7.25%
1992	915,722	771,421	119%	47,528	191,829	6.25%
1993	951,972	844,803	113%	59,622	166,791	6.40%
1994	1,001,129	936,698	107%	75,569	140,000	5.65%
1995	1,032,503	887,730	116%	37,278	182,050	7.15%
1996	1,198,221	1,134,194	106%	83,071	147,098	5.30%
1997	1,368,188	1,192,222	115%	47,906	223,871	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table S-24

Funding of Underfunded PBGC-Insured Plans (1980-1997) Single-Employer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Underfunding (in millions)	Funding Ratio	PBGC Rate*
1980	\$53,840	\$73,996	\$20,156	73%	8.50%
1981	31,587	43,630	12,043	72%	9.75%
1982	29,967	40,230	10,263	74%	10.75%
1983	37,037	48,820	11,783	76%	9.75%
1984	26,208	36,084	9,876	73%	9.75%
1985	28,722	39,904	11,182	72%	9.75%
1986	41,780	56,499	14,719	74%	8.50%
1987	62,942	83,634	20,692	75%	7.50%
1988	68,920	91,261	22,341	76%	8.25%
1989	99,682	126,022	26,340	79%	7.75%
1990	95,068	130,758	35,689	73%	7.25%
1991	147,301	181,786	34,485	81%	7.25%
1992	172,372	219,900	47,528	78%	6.25%
1993	215,695	275,317	59,622	78%	6.40%
1994	308,516	384,085	75,569	80%	5.65%
1995	218,493	255,771	37,278	85%	7.15%
1996	493,597	576,668	83,071	86%	5.30%
1997	353,823	401,729	47,906	88%	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table S-25

Funding of Overfunded PBGC-Insured Plans (1980-1997) Single-Employer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Overfunding (in millions)	Funding Ratio	PBGC Rate*
1980	\$205,970	\$138,076	\$67,894	149%	8.50%
1981	278,382	163,706	114,676	170%	9.75%
1982	301,573	166,073	135,500	182%	10.75%
1983	339,695	192,190	147,505	177%	9.75%
1984	431,436	244,611	186,825	176%	9.75%
1985	471,951	268,713	203,238	176%	9.75%
1986	577,710	349,619	228,091	165%	8.50%
1987	581,297	379,621	201,676	153%	7.50%
1988	571,821	359,583	212,238	159%	8.25%
1989	596,464	391,204	205,260	152%	7.75%
1990	742,063	473,289	268,773	157%	7.25%
1991	700,950	506,110	194,840	138%	7.25%
1992	743,350	551,520	191,829	135%	6.25%
1993	736,277	569,486	166,791	129%	6.40%
1994	692,613	552,613	140,000	125%	5.65%
1995	814,009	631,959	182,050	129%	7.15%
1996	704,624	557,526	147,098	126%	5.30%
1997	1,014,365	790,494	223,871	128%	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table S-26

Concentration of Underfunding in PBGC-Insured Plans (1990-1997) Single-Employer Program

Beginning of Year	Total Underfunding (in millions)	10 Plans With the Highest Underfunding (in millions)		Next 40 Plans Underfunding (in millions)		All Other Plans Underfunding (in millions)	
1990	\$35,689	\$14,119	39.6%	\$6,487	18.2%	\$15,083	42.3%
1991	34,485	14,067	40.8%	6,884	20.0%	13,534	39.2%
1992	47,528	21,610	45.5%	7,818	16.4%	18,100	38.1%
1993	59,622	25,894	43.4%	9,337	15.7%	24,392	40.9%
1994	75,569	28,658	37.9%	10,310	13.6%	36,601	48.4%
1995	37,278	6,535	17.5%	7,921	21.2%	22,822	61.2%
1996	83,071	13,850	16.7%	16,410	19.8%	52,810	63.6%
1997	47,906	7,751	16.2%	8,473	17.7%	31,682	66.1%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

Due to rounding of individual items, percentages may not add up to 100 percent.

Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1990-1992 and GAM-83 for 1993-1997.

Table S-27

Participants and Funding of PBGC-Insured Plans by Funding Ratio (1997) Single-Employer Program

Funding Ratio	Participants		Total Liabilities		Underfunding		Overfunding	
	(in thousands)		(in millions)		(in millions)		(in millions)	
Under 40%	64	0.2%	\$1,347	0.1%	\$961	2.0%	—	—
40% - 49%	108	0.3%	2,664	0.2%	1,477	3.1%	—	—
50% - 59%	179	0.5%	4,881	0.4%	2,195	4.6%	—	—
60% - 69%	697	2.1%	19,827	1.7%	6,770	14.1%	—	—
70% - 79%	1,917	5.8%	39,232	3.3%	9,605	20.1%	—	—
80% - 89%	4,417	13.3%	129,857	10.9%	18,401	38.4%	—	—
90% - 99%	5,396	16.2%	203,922	17.1%	8,496	17.7%	—	—
100% - 109%	4,845	14.6%	160,365	13.5%	—	—	\$7,941	3.5%
110% - 119%	4,980	15.0%	217,134	18.2%	—	—	32,152	14.4%
120% - 129%	3,759	11.3%	132,093	11.1%	—	—	33,032	14.8%
130% - 139%	2,636	7.9%	123,082	10.3%	—	—	42,132	18.8%
140% - 149%	1,190	3.6%	50,239	4.2%	—	—	22,341	10.0%
150% and Over	3,026	9.1%	107,582	9.0%	—	—	86,274	38.5%
TOTAL	33,214	100.0%	\$1,192,222	100.0%	\$47,906	100.0%	\$223,871	100.0%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

Due to rounding of individual items, dollar totals may not add up to totals in other tables and percentages may not add up to 100 percent.

Vested liabilities have been adjusted to an interest rate that, along with the GAM-83 mortality table, reflects the cost to purchase an annuity at the beginning of 1997.

Table S-28

Various Measures of Underfunding in PBGC-Insured Plans (1990-1999) Single-Employer Program

Beginning of Year	(A) Form 5500 Filings <small>(in billions)</small>	(B) Top 50 / Compustat <small>(in billions)</small>	(C) Variable Rate Premium <small>(in billions)</small>	(D) Section 4010 Filings <small>(in billions)</small>	(E) Reasonably Possible <small>(in billions)</small>
1990	\$35.69	\$26.78	\$41.28	—	\$8.00
1991	34.48	32.80	43.32	—	13.00
1992	47.53	38.19	53.66	—	12.36
1993	59.62	53.07	43.80	—	13.06
1994	75.57	71.00	65.67	—	18.23
1995	37.28	31.39	33.37	—	14.56
1996	83.07	63.68	82.23	\$38.10	22.47
1997	47.91	—	51.57	28.70	20.73
1998	—	—	37.23	25.20	15.38
1999	—	—	28.86	34.90	17.50

Definitions:

(A) Underfunding calculated from IRS Form 5500 filings.

(B) Data collected from companies in the preparation of the PBGC Top 50 list of largest underfunded plan sponsors.
Data for other firms is obtained from Standard & Poor's Compustat.

(C) Underfunding data from PBGC premium filings used to calculate the Variable Rate Premium.

(D) Data from filings made under Section 4010 of ERISA, which requires that companies annually provide PBGC with information on their underfunded plans, if the firm's aggregate underfunding exceeds \$50 million, or there is an outstanding lien for missed contributions exceeding \$1 million or an outstanding funding waiver of more than \$1 million.

(E) Underfunding for plan sponsors with less than investment grade bond ratings.

Firms and plans included in (C), (D) and (E) totals may differ from year to year.

Table S-29

Funding of PBGC-Insured Plans by Industry (1997) Single-Employer Program

Industry	Funding Ratio	Total Liabilities (in millions)		Underfunding (in millions)		Overfunding (in millions)	
AGRICULTURE, MINING, AND CONSTRUCTION	108%	\$17,129	1.4%	\$826	1.7%	\$2,266	1.0%
MANUFACTURING	107%	662,001	55.5%	29,811	62.2%	90,688	40.5%
Chemical and Allied Products	109%	66,732	5.6%	2,463	5.1%	8,618	3.8%
Electronic, Electrical Equipment	117%	81,168	6.8%	4,006	8.4%	17,811	8.0%
Fabricated Metal Products	100%	25,189	2.1%	2,700	5.6%	2,675	1.2%
Food and Tobacco Products	111%	32,328	2.7%	1,472	3.1%	5,000	2.2%
Machinery and Computer Equipment	110%	69,776	5.9%	1,822	3.8%	9,015	4.0%
Motor Vehicle Equipment	108%	119,937	10.1%	2,489	5.2%	11,805	5.3%
Paper and Allied Products	109%	23,769	2.0%	1,401	2.9%	3,524	1.6%
Petroleum Refining	111%	27,505	2.3%	451	0.9%	3,437	1.5%
Primary Metals	95%	42,470	3.6%	4,654	9.7%	2,721	1.2%
Scientific and Medical Instruments	103%	13,502	1.1%	706	1.5%	1,167	0.5%
Other Manufacturing	111%	159,626	13.4%	7,646	16.0%	24,915	11.1%
TRANSPORTATION AND PUBLIC UTILITIES	127%	219,861	18.4%	5,212	10.9%	64,126	28.6%
Air Transportation	102%	29,481	2.5%	1,869	3.9%	2,500	1.1%
Other Transportation	110%	16,794	1.4%	1,192	2.5%	2,836	1.3%
Public Utilities	133%	173,587	14.6%	2,151	4.5%	58,790	26.3%
WHOLESALE TRADE	120%	14,677	1.2%	825	1.7%	3,723	1.7%
RETAIL TRADE	102%	22,062	1.9%	2,301	4.8%	2,678	1.2%
FINANCE, INSURANCE, AND REAL ESTATE	120%	125,907	10.6%	3,704	7.7%	29,209	13.0%
SERVICES	121%	103,758	8.7%	4,239	8.8%	25,861	11.6%
NON-PROFIT ORGANIZATIONS	116%	26,828	2.3%	988	2.1%	5,321	2.4%
TOTAL	115%	\$1,192,222	100.0%	\$47,906	100.0%	\$223,871	100.0%

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

Due to rounding of individual items, percentages may not add up to 100 percent.

Vested liabilities have been adjusted to an interest rate that, along with the GAM-83 mortality table, reflects the cost to purchase an annuity at the beginning of 1997.

Table S-30

Pension Funding Data for PBGC-Insured Plans by State (1997) Single-Employer Program

STATE/REGION	OVERFUNDED			UNDERFUNDED			TOTAL	
	Assets (in millions)	Liabilities (in millions)	Overfunding (in millions)	Assets (in millions)	Liabilities (in millions)	Underfunding (in millions)	Assets (in millions)	Liabilities (in millions)
NEW ENGLAND	\$106,946	\$83,286	\$23,660	\$28,776	\$32,305	\$3,529	\$135,722	\$115,591
Connecticut	70,080	54,195	15,885	16,998	18,846	1,848	87,078	73,042
Maine	1,183	985	198	284	329	45	1,467	1,314
Massachusetts	28,141	21,979	6,162	9,098	10,309	1,211	37,240	32,289
New Hampshire	837	705	132	895	1,067	172	1,731	1,772
Rhode Island	6,275	5,054	1,222	1,346	1,572	226	7,622	6,626
Vermont	430	367	63	154	181	27	585	549
MID-ATLANTIC	351,587	278,495	73,092	102,729	119,726	16,997	454,316	398,221
Delaware	5,373	4,397	976	505	611	107	5,878	5,008
District of Columbia	8,622	6,574	2,048	3,016	3,335	319	11,638	9,908
Maryland	24,043	18,496	5,547	4,989	5,678	689	29,032	24,174
New Jersey	70,674	53,601	17,073	20,422	23,050	2,627	91,096	76,650
New York	170,087	136,753	33,334	27,393	32,414	5,021	197,479	169,167
Pennsylvania	55,678	45,007	10,671	35,840	42,532	6,691	91,518	87,539
Virginia	16,200	12,999	3,202	9,656	11,005	1,349	25,857	24,004
West Virginia	910	668	242	908	1,102	194	1,819	1,770
SOUTHEAST	90,946	66,889	24,058	30,006	34,871	4,865	120,952	101,759
Alabama	3,016	2,375	640	737	861	123	3,753	3,236
Arkansas	1,159	909	250	224	269	45	1,383	1,178
Florida	8,735	5,982	2,753	4,358	5,048	689	13,093	11,029
Georgia	40,233	27,460	12,774	5,973	7,202	1,229	46,207	34,662
Kentucky	4,769	3,842	928	1,259	1,508	250	6,028	5,350
Louisiana	3,633	2,859	774	5,704	6,077	373	9,338	8,936
Mississippi	1,431	1,110	321	181	215	34	1,612	1,325
North Carolina	11,069	8,673	2,396	6,445	7,313	868	17,514	15,986
South Carolina	2,666	2,116	550	2,849	3,633	784	5,515	5,749
Tennessee	14,235	11,563	2,671	2,275	2,745	470	16,509	14,308
GREAT LAKES	246,531	193,051	53,479	132,392	146,043	13,651	378,923	339,095
Illinois	68,712	50,577	18,135	30,312	34,927	4,615	99,024	85,504
Indiana	10,542	7,831	2,712	4,928	5,881	953	15,470	13,711
Michigan	95,319	80,597	14,722	53,943	56,247	2,304	149,262	136,844
Minnesota	13,320	9,939	3,381	15,579	17,212	1,633	28,899	27,151
Ohio	44,101	33,951	10,150	20,697	23,790	3,093	64,797	57,741
Wisconsin	14,537	10,158	4,379	6,934	7,986	1,052	21,471	18,143

Table S-30 (continued)
Pension Funding Data for PBGC-Insured Plans by State (1997)
Single-Employer Program

STATE/REGION	OVERFUNDED			UNDERFUNDED			TOTAL	
	Assets (in millions)	Liabilities (in millions)	Overfunding (in millions)	Assets (in millions)	Liabilities (in millions)	Underfunding (in millions)	Assets (in millions)	Liabilities (in millions)
MIDWEST	\$23,933	\$18,893	\$5,041	\$11,166	\$12,877	\$1,710	\$35,100	\$31,770
Iowa	3,014	2,217	796	2,448	2,822	374	5,462	5,039
Kansas	4,414	3,809	604	655	784	128	5,069	4,593
Missouri	14,014	10,777	3,237	7,202	8,237	1,034	21,216	19,013
Nebraska	2,079	1,768	311	779	944	166	2,857	2,712
North Dakota	223	176	48	77	85	8	301	261
South Dakota	190	146	44	5	5	*	195	151
SOUTHWEST	65,525	50,558	14,967	24,999	27,941	2,942	90,524	78,499
Arizona	1,869	1,651	218	4,279	4,459	180	6,147	6,109
New Mexico	2,546	1,366	1,180	317	328	11	2,864	1,695
Oklahoma	2,487	1,980	507	1,979	2,210	231	4,466	4,190
Texas	58,623	45,561	13,062	18,424	20,944	2,520	77,047	66,505
ROCKY MOUNTAIN	19,406	14,582	4,824	4,958	5,458	500	24,364	20,040
Colorado	12,349	8,933	3,416	3,125	3,408	284	15,474	12,341
Idaho	2,092	1,815	277	504	593	90	2,596	2,408
Montana	302	230	72	15	18	3	317	247
Nevada	461	327	135	601	652	52	1,062	979
Utah	4,131	3,242	889	677	748	70	4,808	3,990
Wyoming	71	35	36	36	39	2	107	74
PACIFIC	108,798	84,178	24,619	18,119	21,600	3,481	126,917	105,779
Alaska	143	111	33	110	131	21	253	242
California	67,528	50,814	16,714	12,957	15,727	2,771	80,484	66,542
Hawaii	2,050	1,473	577	584	700	117	2,634	2,173
Oregon	3,167	2,512	655	2,179	2,529	350	5,346	5,041
Washington	35,909	29,269	6,640	2,290	2,512	222	38,199	31,781
U.S. TERRITORIES	693	562	131	678	908	230	1,371	1,470
American Samoa	*	*	*	2	2	*	2	2
Guam	4	4	*	*	*	*	4	4
Puerto Rico	686	556	130	656	880	224	1,342	1,437
Virgin Islands	2	2	*	20	26	5	23	28
TOTAL	\$1,014,365	\$790,494	\$223,871	\$353,823	\$401,729	\$47,906	\$1,368,188	\$1,192,222

Source: Internal Revenue Service Form 5500 Series Filings for single-employer plans with 100 or more participants.

Due to rounding of individual items, totals may not equal those in other tables or add up across columns.

Vested liabilities have been adjusted to an interest rate that, along with the GAM-83 mortality table, reflects the cost to purchase an annuity at the beginning of 1997.

Funding data is reported by state of plan administration.

*Less than \$500,000.

Table S-31
PBGC Pension Data by State* and Region
Single-Employer Program

STATE/REGION	CLAIMS 1975-1999		COVERAGE 1999		BENEFITS PAID 1999		
	Plans	Claims	Plans	Participants	Payees	Payments	Mean Monthly Pension
NEW ENGLAND	349	\$421,795,203	3,039	1,930,193	14,511	\$42,489,282	\$228
Connecticut	97	250,835,608	1,102	723,393	4,798	15,844,115	261
Maine	8	932,489	146	148,737	1,293	2,336,328	141
Massachusetts	180	109,693,957	1,305	730,165	5,341	15,356,896	222
New Hampshire	16	6,138,752	183	145,356	1,141	4,132,001	282
Rhode Island	39	34,852,346	209	111,553	1,299	2,397,392	140
Vermont	9	19,342,051	94	70,989	639	2,422,551	288
MID-ATLANTIC	955	3,348,192,397	12,309	7,565,319	57,632	226,722,931	307
Delaware	4	4,392,433	179	169,020	664	2,481,808	305
District of Columbia	11	3,326,881	289	50,706	181	657,032	285
Maryland	63	64,516,672	709	726,784	2,194	9,410,319	341
New Jersey	160	149,654,683	2,276	1,142,573	6,018	21,370,281	280
New York	381	2,022,008,900	5,209	2,271,623	14,749	56,466,130	298
Pennsylvania	266	603,263,976	2,626	1,717,240	26,386	108,859,720	319
Virginia	27	8,243,149	792	1,179,756	4,103	12,532,353	244
West Virginia	43	492,785,703	229	307,616	3,337	14,945,287	351
SOUTHEAST	209	175,952,137	4,242	6,321,336	52,724	223,178,617	342
Alabama	15	9,809,662	298	392,126	3,359	8,117,486	210
Arkansas	8	4,359,684	175	219,725	1,301	3,186,926	197
Florida	48	50,153,706	976	1,541,460	22,197	125,214,478	444
Georgia	33	45,482,227	630	990,455	7,335	34,710,169	378
Kentucky	15	7,807,667	377	540,864	2,248	5,783,831	217
Louisiana	20	5,931,106	302	537,482	1,790	5,691,965	255
Mississippi	6	2,063,353	150	182,541	1,347	2,641,835	166
North Carolina	28	10,736,972	620	922,848	4,531	16,026,246	276
South Carolina	5	59,414	259	463,114	3,151	8,627,064	213
Tennessee	31	39,548,346	455	530,722	5,465	13,178,616	193
GREAT LAKES	811	1,458,700,938	8,501	7,250,942	62,338	241,662,188	305
Illinois	183	206,559,744	2,424	1,740,902	8,718	27,065,690	254
Indiana	77	57,437,148	765	723,403	9,723	36,270,493	292
Michigan	213	238,340,356	1,667	1,308,211	11,515	38,987,574	271
Minnesota	34	116,184,119	585	703,123	3,548	15,179,473	283
Ohio	238	564,422,018	2,206	1,707,099	22,172	102,011,189	357
Wisconsin	66	275,757,553	854	1,068,204	6,662	22,147,770	289

*Claims data by state of plan administration; benefits and coverage data by state of payee residence.

Table S-31 (continued)
PBGC Pension Data by State* and Region
Single-Employer Program

STATE/REGION	CLAIMS 1975-1999		COVERAGE 1999		BENEFITS PAID 1999		
	Plans	Claims	Plans	Participants	Payees	Payments	Mean Monthly Pension
MIDWEST	89	\$153,544,214	1,587	1,879,498	9,259	\$29,956,915	\$254
Iowa	28	86,290,540	443	381,984	5,764	19,165,408	254
Kansas	19	28,451,228	234	368,463	684	2,911,436	334
Missouri	36	31,387,877	628	811,293	2,342	6,281,461	227
Nebraska	4	7,285,836	190	206,205	345	1,138,956	259
North Dakota	2	128,733	54	57,466	67	208,161	217
South Dakota	0	0	38	54,086	57	251,493	321
SOUTHWEST	123	164,331,729	2,317	2,957,843	10,586	39,561,662	296
Arizona	20	6,174,559	487	466,494	1,831	7,556,197	323
New Mexico	6	10,377,511	131	145,356	585	2,331,149	313
Oklahoma	15	39,607,621	265	297,474	1,130	3,548,662	244
Texas	82	108,172,038	1,434	2,048,519	7,040	26,125,654	295
ROCKY MOUNTAIN	35	204,221,409	809	1,044,540	5,007	29,093,046	454
Colorado	12	186,889,425	366	378,604	2,751	20,692,082	582
Idaho	6	12,554,525	76	108,173	646	1,869,808	226
Montana	3	252,370	56	98,031	128	486,939	273
Nevada	6	788,421	101	196,063	822	3,416,144	337
Utah	7	3,024,648	181	182,541	568	2,286,918	306
Wyoming	1	712,020	29	81,129	92	341,155	296
PACIFIC	192	340,888,259	4,596	4,786,397	14,047	59,503,427	337
Alaska	5	2,721,269	41	54,086	46	131,105	238
California	139	278,725,051	3,568	3,441,000	10,728	46,109,628	343
Hawaii	15	16,260,130	277	118,314	1,094	4,939,384	350
Oregon	17	32,233,385	282	314,377	850	2,779,940	255
Washington	16	10,948,424	428	858,620	1,329	5,543,371	333
PUERTO RICO	12	10,764,177	124	66,712	1,575	5,213,043	273
U.S. TERRITORIES	0	0	11	1,136	90	447,264	386
FOREIGN COUNTRIES	—	—	—	—	757	3,083,146	320
TOTAL	2,775	\$6,278,390,463	37,535	33,803,916	228,526	\$900,911,522	\$311

Sources: PBGC Fiscal Year Closing File (9/30/99), Employee Benefits Supplement to the April 1993 Current Population Survey, PBGC Case Administration System, PBGC Premium Filings, PBGC Participant System (PRISM), and fiscal year calculations.

Due to rounding of individual items, totals may not equal those in other tables.

*Claims data by state of plan administration; benefits and coverage data by state of payee residence.

Table S-32

**PBGC Maximum Guaranteed Benefits (1988-2000)
Single-Employer Program**

Year of Plan Termination	Maximum Monthly Guarantee	Maximum Annual Guarantee
1988	\$1,909.09	\$22,909.08
1989	2,028.41	24,340.92
1990	2,164.77	25,977.24
1991	2,250.00	27,000.00
1992	2,352.27	28,227.24
1993	2,437.50	29,250.00
1994	2,556.82	30,681.84
1995	2,573.86	30,886.32
1996	2,642.05	31,704.60
1997	2,761.36	33,136.32
1998	2,880.68	34,568.16
1999	3,051.14	36,613.68
2000	3,221.59	38,659.08

The Employee Retirement Income Security Act of 1974 (ERISA) mandates that the maximum guaranteed amount be adjusted annually based on changes in the Social Security contribution and benefit base.

The maximum guarantee applies to workers who retire at age 65 or later.

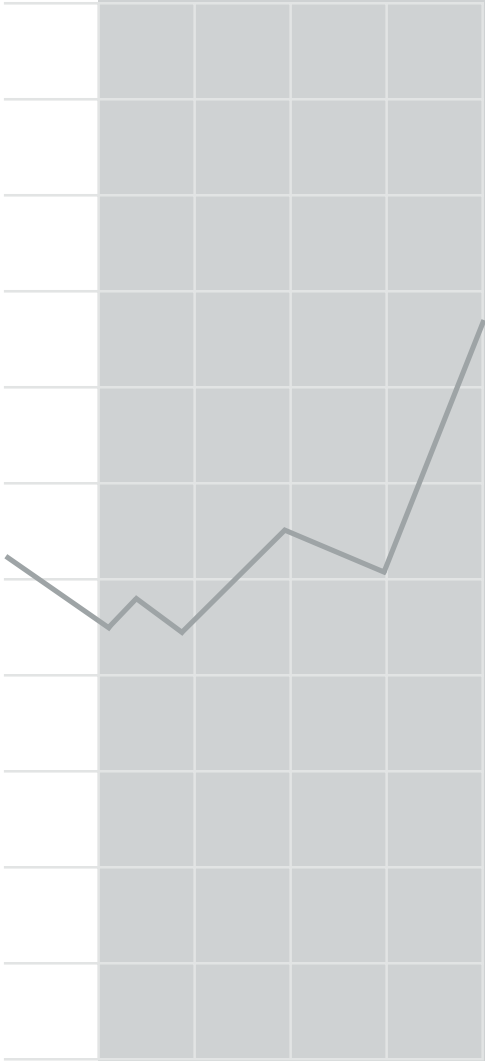
Maximum guarantees are reduced for retirees taking earlier retirement or electing survivor's benefits.

In some instances, where a pension plan has adequate resources or PBGC recovers sufficient amounts, a participant may receive benefits in excess of the maximum guarantee.

Table S-33

**PBGC's Historic Premium Rates
Single-Employer Program**

For Plan Years Beginning	Flat Rate Premium (per participant)	Variable Rate Premium
September 2, 1974 - December 31, 1977	\$1.00	—
January 1, 1978 - December 31, 1985	2.60	—
January 1, 1986 - December 31, 1987	8.50	—
January 1, 1988 - December 31, 1990	16.00	\$6 per \$1,000 of unfunded vested benefits (Maximum of \$34 per participant)
January 1, 1991 - June 30, 1994	19.00	\$9 per \$1,000 of unfunded vested benefits (Maximum of \$53 per participant)
July 1, 1994 - June 30, 1995	19.00	\$9 per \$1,000 of unfunded vested benefits (Maximum of \$53 per participant plus 20% of uncapped variable premium in excess of \$53 per participant)
July 1, 1995 - June 30, 1996	19.00	\$9 per \$1,000 of unfunded vested benefits (Maximum of \$53 per participant plus 60% of uncapped variable premium in excess of \$53 per participant)
On or After July 1, 1996	19.00	\$9 per \$1,000 of unfunded vested benefits (No maximum)



APPENDIX M

Multiemployer Data Tables

Table M-1

Net Financial Position of PBGC's Multiemployer Program (1980-1999)

Fiscal Year	Assets (in millions)	Liabilities (in millions)	Net Position (in millions)
1980	\$21	\$30	-\$9
1981	28	29	-1
1982	40	29	11
1983	52	46	6
1984	61	44	17
1985	78	52	27
1986	98	54	45
1987	114	45	68
1988	129	37	92
1989	161	37	123
1990	190	58	132
1991	238	75	163
1992	283	114	169
1993	407	131	276
1994	378	181	197
1995	477	285	192
1996	505	381	124
1997	596	377	219
1998	745	404	341
1999	692	493	199

Source: PBGC Annual Report (1980-1999).
Due to rounding of individual items, rows may not add across.

Table M-2

**PBGC Premium Revenue, Benefit Payments and Expenses (1980-1999)
Multiemployer Program**

Fiscal Year	Total Premium Revenue (in millions)	Benefit Payments (in millions)	Administrative & Investment Expenses (in millions)	Premiums Minus Benefits Paid and Expenses (in millions)
1980	\$5	\$4	\$2	-\$2
1981	12	4	2	5
1982	13	5	3	5
1983	13	4	3	6
1984	12	4	3	6
1985	14	4	4	7
1986	15	3	4	8
1987	17	3	3	10
1988	17	3	4	11
1989	20	3	3	15
1990	21	2	2	17
1991	23	2	*	21
1992	23	2	*	21
1993	23	2	*	21
1994	23	2	*	21
1995	22	2	*	20
1996	22	2	*	20
1997	23	1	*	22
1998	23	1	*	22
1999	23	1	*	22

Source: PBGC Annual Report (1980-1999).

* Less than \$500,000.

Due to aggregation and rounding of individual items, figures may not add up to totals in other tables or add up across columns.

Table M-3

**PBGC Payees and Benefit Payments (1980-1999)
Multiemployer Program**

Fiscal Year	Payees in Year	PERIODIC PENSION PAYMENTS		
		Total (in millions)	Average Monthly Payment	Median Monthly Payment
1980	4,100	\$4	\$77	\$45
1981	4,000	4	83	45
1982	3,800	5	86	45
1983	3,500	4	89	45
1984	3,400	4	93	45
1985	3,100	4	91	45
1986	3,250	3	91	45
1987	2,800	3	92	45
1988	2,500	3	93	45
1989	2,310	3	95	45
1990	2,170	2	97	50
1991	1,990	2	98	51
1992	1,760	2	98	52
1993	1,590	2	99	53
1994	1,420	2	102	55
1995	1,300	2	102	55
1996	1,130	2	104	55
1997	1,000	1	102	55
1998	855	1	104	55
1999	738	1	106	62

Sources: PBGC Participant System (PRISM), fiscal year calculations, PBGC Management Reports and PBGC Benefit Payment Reports. Payments made on a quarterly, semi-annual, or annual basis were converted to their monthly equivalent.

Table M-4

PBGC-Covered Plan Participants (1980-1999) Multiemployer Program

Year	Total Covered Participants (in thousands)	In Plans with 10,000+ Participants (in thousands)	In Plans with 5,000-9,999 Participants (in thousands)	In Plans with 2,500-4,999 Participants (in thousands)	In Plans with 1,000-2,499 Participants (in thousands)	In Plans with 500-999 Participants (in thousands)	In Plans with 250-499 Participants (in thousands)	In Plans with <250 Participants (in thousands)
1980	7,997	5,072	925	751	731	299	147	71
1981	8,150	5,151	960	781	759	281	145	74
1982	8,475	5,404	1,026	776	746	305	145	72
1983	8,384	5,438	934	774	727	302	139	71
1984	8,059	5,119	973	739	719	306	136	67
1985	8,209	5,376	857	761	729	283	136	66
1986	8,154	5,316	879	746	731	288	129	64
1987	8,256	5,443	908	718	709	293	124	61
1988	8,294	5,453	917	739	704	295	127	58
1989	8,426	5,557	918	767	702	302	124	56
1990	8,534	5,731	891	757	695	290	121	48
1991	8,710	5,996	874	731	665	285	110	47
1992	8,780	6,105	830	734	672	276	115	49
1993	8,657	5,990	869	711	657	270	111	49
1994	8,559	5,931	861	703	639	263	112	50
1995	8,632	5,986	855	709	661	264	112	45
1996	8,649	5,976	904	713	636	266	106	48
1997	8,740	6,058	906	718	641	263	110	44
1998	8,824	6,166	930	671	651	259	107	40
1999	8,957	6,339	914	659	655	252	101	37

Source: PBGC Premium Filings, various years.

1999 figures are estimates from PBGC internal calculations.

1995-1997 data have been revised and 1998 estimates reported last year have been updated to reflect actual premium filings.

Table M-5

**PBGC-Insured Plans (1980-1999)
Multiemployer Program**

Year	Total Insured Plans	Insured Plans with 10,000+ Participants	Insured Plans with 5,000-9,999 Participants	Insured Plans with 2,500-4,999 Participants	Insured Plans with 1,000-2,499 Participants	Insured Plans with 500-999 Participants	Insured Plans with 250-499 Participants	Insured Plans with <250 Participants
1980	2,244	120	131	211	452	420	404	506
1981	2,272	121	135	221	479	392	399	525
1982	2,289	125	142	218	468	420	396	520
1983	2,285	134	132	218	454	418	385	544
1984	2,223	127	138	209	451	430	381	487
1985	2,188	137	124	216	459	402	376	474
1986	2,153	135	127	213	461	405	362	450
1987	2,098	139	131	205	438	408	344	433
1988	2,081	137	133	213	436	409	351	402
1989	2,060	137	131	217	430	417	337	391
1990	1,983	140	127	214	428	402	332	340
1991	1,926	145	127	207	414	401	302	330
1992	1,936	150	121	210	418	386	310	341
1993	1,900	143	126	204	412	378	302	335
1994	1,880	141	125	202	403	369	302	338
1995	1,879	144	123	205	409	368	303	327
1996	1,876	143	132	206	400	373	287	335
1997	1,846	145	131	206	401	365	296	302
1998	1,802	146	136	192	401	357	287	283
1999	1,773	148	134	187	397	346	273	288

Source: PBGC Premium Filings, various years.

1999 figures are estimates from PBGC internal calculations.

1995-1997 data have been revised and 1998 estimates reported last year have been updated to reflect actual premium filings.

Table M-6

PBGC-Insured Plans and Participants by Industry (1999) Multiemployer Program

Industry	Covered Participants		Insured Plans	
AGRICULTURE	18,852	0.2%	12	0.7%
MINING	193,803	2.2%	7	0.4%
CONSTRUCTION	3,078,597	34.4%	987	55.7%
General Contracting	499,029	5.6%	102	5.7%
Heavy Construction	389,913	4.4%	61	3.4%
Plumbing, Heating and Air Conditioning	316,394	3.5%	180	10.1%
Electrical Work	644,322	7.2%	132	7.5%
Masonry, Brick and Stonework	150,706	1.7%	142	8.0%
Carpentry	397,411	4.4%	99	5.6%
Roofing and Sheet Metal Work	242,262	2.7%	74	4.2%
Other Construction	438,560	4.9%	197	11.1%
MANUFACTURING	1,345,944	15.0%	216	12.2%
Food and Tobacco Products	233,315	2.6%	33	1.8%
Apparel and Textile Products	326,917	3.6%	17	1.0%
Paper and Allied Products	70,720	0.8%	5	0.3%
Printing and Publishing	218,122	2.4%	46	2.6%
Furniture and Fixtures	63,369	0.7%	5	0.3%
Machinery and Computer Equipment	175,126	2.0%	7	0.4%
Electrical and Electronic Equipment	44,335	0.5%	9	0.5%
Other Manufacturing	214,040	2.4%	94	5.3%
TRANSPORTATION AND PUBLIC UTILITIES	1,463,895	16.3%	143	8.1%
Trucking	1,260,305	14.1%	69	3.9%
Water Transportation	115,833	1.3%	42	2.4%
Other Transportation	49,300	0.6%	25	1.4%
Public Utilities	38,457	0.4%	7	0.4%
WHOLESALE TRADE	229,672	2.6%	55	3.1%
RETAIL TRADE	1,255,818	14.0%	119	6.7%
FINANCE, INSURANCE, AND REAL ESTATE	18,210	0.2%	4	0.2%
SERVICES	1,352,194	15.1%	230	13.0%
TOTAL	8,956,985	100.0%	1,773	100.0%

Source: PBGC Premium Filings.

Due to aggregation and rounding of individual items, totals may not add up to totals in other tables and percentages may not add up to 100 percent.

Table M-7

**PBGC-Covered Plan Participants by Participant Status (1980-1997)
Multiemployer Program**

Year	Active Participants	Retired Participants	Separated Vested Participants
1980	75.9%	17.7%	6.5%
1981	73.7%	19.1%	7.3%
1982	72.9%	18.6%	8.6%
1983	68.6%	21.7%	9.7%
1984	66.5%	23.1%	10.4%
1985	66.1%	22.6%	11.4%
1986	63.7%	23.2%	13.1%
1987	62.3%	24.1%	13.6%
1988	61.1%	24.5%	14.4%
1989	61.3%	24.6%	14.1%
1990	58.6%	25.2%	16.2%
1991	57.2%	26.3%	16.5%
1992	54.6%	27.6%	17.8%
1993	53.5%	28.0%	18.4%
1994	53.4%	28.0%	18.6%
1995	51.5%	29.1%	19.4%
1996	51.3%	29.2%	19.6%
1997	51.1%	29.1%	19.8%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

1997 figures are estimates from PBGC internal calculations.

1996 estimates reported last year have been updated to reflect actual Form 5500 filings.

Due to rounding of individual items, rows may not add up to 100 percent.

Table M-8

Funding of PBGC-Insured Plans (1980-1997) Multiemployer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Funding Ratio	Underfunding (in millions)	Overfunding (in millions)	PBGC Rate*
1980	\$40,363	\$52,123	77%	\$17,887	\$6,126	8.50%
1981	46,342	53,282	87%	13,068	6,129	9.75%
1982	55,073	57,477	96%	11,560	9,156	10.75%
1983	64,202	64,410	100%	11,221	11,013	9.75%
1984	73,932	69,865	106%	10,282	14,350	9.75%
1985	88,182	75,942	116%	6,432	18,672	9.75%
1986	107,259	93,436	115%	7,687	21,511	8.50%
1987	121,080	111,259	109%	10,079	19,900	7.50%
1988	126,963	109,882	116%	8,240	25,321	8.25%
1989	135,654	121,915	111%	8,635	22,374	7.75%
1990	166,348	156,149	107%	11,574	21,773	7.25%
1991	165,734	160,370	103%	13,068	18,432	7.25%
1992	184,670	187,829	98%	17,835	14,676	6.25%
1993	197,461	202,177	98%	19,864	15,148	6.40%
1994	206,625	225,982	91%	29,193	9,837	5.65%
1995	209,947	218,458	96%	22,726	14,216	7.15%
1996	238,571	270,551	88%	40,019	8,039	5.30%
1997	268,471	287,569	93%	32,549	13,452	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table M-9

Funding of Underfunded PBGC-Insured Plans (1980-1997) Multiemployer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Underfunding (in millions)	Funding Ratio	PBGC Rate*
1980	\$24,819	\$42,706	\$17,887	58%	8.50%
1981	25,599	38,668	13,068	66%	9.75%
1982	22,301	33,861	11,560	66%	10.75%
1983	27,287	38,508	11,221	71%	9.75%
1984	22,515	32,798	10,282	69%	9.75%
1985	22,813	29,246	6,432	78%	9.75%
1986	27,035	34,723	7,687	78%	8.50%
1987	29,782	39,861	10,079	75%	7.50%
1988	29,802	38,042	8,240	78%	8.25%
1989	34,845	43,480	8,635	80%	7.75%
1990	56,512	68,086	11,574	83%	7.25%
1991	62,563	75,631	13,068	83%	7.25%
1992	93,790	111,625	17,835	84%	6.25%
1993	95,331	115,195	19,864	83%	6.40%
1994	128,718	157,911	29,193	82%	5.65%
1995	118,707	141,434	22,726	84%	7.15%
1996	168,347	208,366	40,019	81%	5.30%
1997	152,633	185,182	32,549	82%	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table M-10

Funding of Overfunded PBGC-Insured Plans (1980-1997) Multiemployer Program

Beginning of Year	Assets (in millions)	Liabilities (in millions)	Overfunding (in millions)	Funding Ratio	PBGC Rate*
1980	\$15,543	\$9,417	\$6,126	165%	8.50%
1981	20,743	14,614	6,129	142%	9.75%
1982	32,772	23,615	9,156	139%	10.75%
1983	36,915	25,902	11,013	143%	9.75%
1984	51,417	37,067	14,350	139%	9.75%
1985	65,368	46,697	18,672	140%	9.75%
1986	80,223	58,713	21,511	137%	8.50%
1987	91,298	71,398	19,900	128%	7.50%
1988	97,161	71,840	25,321	135%	8.25%
1989	100,809	78,435	22,374	129%	7.75%
1990	109,836	88,062	21,773	125%	7.25%
1991	103,171	84,739	18,432	122%	7.25%
1992	90,880	76,204	14,676	119%	6.25%
1993	102,130	86,981	15,148	117%	6.40%
1994	77,907	68,070	9,837	114%	5.65%
1995	91,240	77,024	14,216	118%	7.15%
1996	70,224	62,185	8,039	113%	5.30%
1997	115,838	102,386	13,452	113%	5.80%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

* Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year. The assumed mortality table was UP-84 for 1980-1992 and GAM-83 for 1993-1997.

Table M-11

Concentration of Underfunding in PBGC-Insured Plans (1990-1997) Multiemployer Program

Beginning of Year	Total Underfunding <small>(in millions)</small>	10 Plans with the Highest Underfunding <small>(in millions)</small>		Next 40 Plans Underfunding <small>(in millions)</small>		All Other Plans Underfunding <small>(in millions)</small>	
1990	\$11,574	\$6,760	58.4%	\$2,791	24.1%	\$2,023	17.5%
1991	13,068	7,906	60.5%	3,123	23.9%	2,038	15.6%
1992	17,835	9,500	53.3%	4,411	24.7%	3,923	22.0%
1993	19,864	10,348	52.1%	4,927	24.8%	4,590	23.1%
1994	29,193	13,575	46.5%	7,012	24.0%	8,606	29.5%
1995	22,726	11,340	49.9%	6,236	27.4%	5,150	22.7%
1996	40,019	16,157	40.4%	10,900	27.2%	12,962	32.4%
1997	32,549	14,666	45.1%	8,166	25.1%	9,717	29.9%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

Due to rounding of individual items, percentages may not add up to 100 percent.

Vested liabilities have been adjusted to an interest rate that, along with an assumed mortality table, reflects the cost to purchase an annuity at the beginning of the relevant year.

The assumed mortality table was UP-84 for 1990-1992 and GAM-83 for 1993-1997.

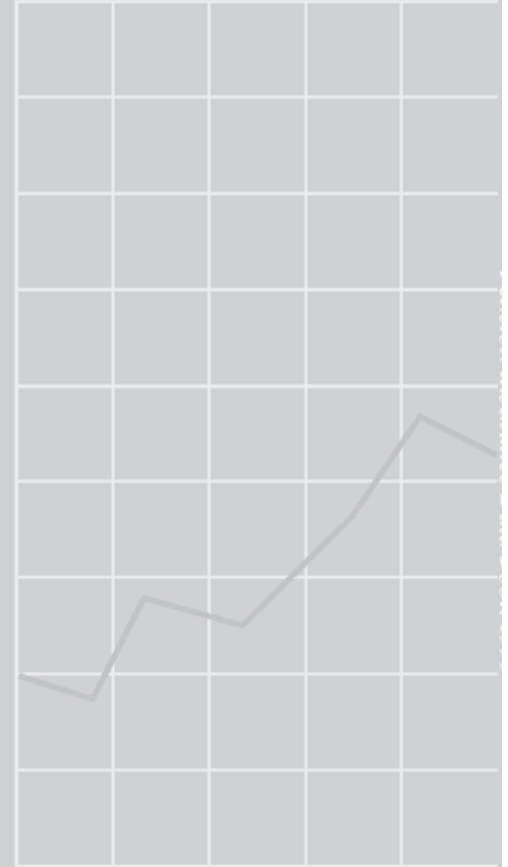
Table M-12

**Participants and Funding of PBGC-Insured Plans by Funding Ratio (1997)
Multiemployer Program**

Funding Ratio	Participants (in thousands)		Total Liabilities (in millions)		Underfunding (in millions)		Overfunding (in millions)	
Under 40%	101	1.2%	\$2,136	0.7%	\$1,486	4.6%	—	—
40% - 49%	14	0.2%	405	0.1%	226	0.7%	—	—
50% - 59%	305	3.5%	8,163	2.8%	3,679	11.3%	—	—
60% - 69%	204	2.3%	9,868	3.4%	3,429	10.5%	—	—
70% - 79%	1,157	13.2%	45,131	15.7%	12,367	38.0%	—	—
80% - 89%	1,567	17.9%	50,287	17.5%	7,405	22.8%	—	—
90% - 99%	1,984	22.7%	69,193	24.1%	3,956	12.2%	—	—
100% - 109%	1,659	19.0%	57,278	19.9%	—	—	\$2,709	20.1%
110% - 119%	940	10.8%	25,034	8.7%	—	—	3,633	27.0%
120% - 129%	347	4.0%	8,374	2.9%	—	—	2,000	14.9%
130% - 139%	311	3.6%	7,917	2.8%	—	—	2,755	20.5%
140% - 149%	54	0.6%	1,187	0.4%	—	—	554	4.1%
150% and Over	97	1.1%	2,596	0.9%	—	—	1,800	13.4%
TOTAL	8,740	100.0%	\$287,569	100.0%	\$32,549	100.0%	\$13,452	100.0%

Source: Internal Revenue Service Form 5500 Series Filings for multiemployer plans with 100 or more participants.

Vested liabilities have been adjusted to an interest rate that, along with the GAM-83 mortality table, reflects the cost to purchase an annuity at the beginning of 1997.



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